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# THE INSTITUTE OF HUMAN RELATIONS AT YALE UNIVERSITY*

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## I. HISTORY OF THE INSTITUTE

A QUARTER of a century ago the medical student's formal training in psychiatry seldom consisted of more than occasional visits to insane asylums. What the student saw there indicated such small possibilities of doing anything constructive for the insane, and so filled him with horror, that only the rare exception was willing to pursue further the subject of mental disease.

Yet, psychiatry was taught, even though it was not included by that name in the curriculum. Students learned from the example of the great clinical masters to approach the patient in a manner which imbued the latter with confidence and an optimistic outlook on life. Some may say that this was not psychiatry because the patients were for the most part simply persons suffering from various kinds of physical disability, but we now recognize the attitude of these older physicians as one that is essential from the psychiatric point of view.

A considerable period of time elapsed before much conscious thought was given to the development of psychiatry as a part of medicine. During this period, from 1905 to 1920, great changes were taking place, however, in other fields. Chemical and physical laboratories for the scientific study of the human organism sprang up in connection with the clinical work in good schools all over the country. Specialization became the vogue. So much knowledge was gained concerning minute phases of medicine that men could with difficulty keep abreast of progress even in a single, narrow branch. Medical students and physicians developed the habit of looking at patients from the point of view of a particular interest, such as the heart, the lungs, or the digestive processes. Few thought of the patient as an individual. Instead of producing doctors for the whole man, medical schools began to turn out doctors for fractions of a man.

After the War, when the Yale School of Medicine considered bringing psychiatry into the curriculum, it was agreed that a major purpose should be the restoration to medicine generally of the humanitarian viewpoint which enabled the old-fashioned doctor to carry away the family troubles in his unsanitary black bag.

A conclusion was reached that something might be accomplished by establishing a small psychopathic hospital, in conjunction with the general hospital, for the study of end products of mental derangement. It was felt that this might be a stepping stone toward the ultimate goal because it would result in a closer relationship between the psychiatrists and the physicians and students. It would also tend to promote an interest in evaluating the safety factor in the mental economy of general hospital patients.

Experience in other fields of medicine indicated the limited value of curative methods and the much greater importance of prevention. Why should not the principles of preventive medicine apply as well to the mind as to the body?

The idea was not original. The mental hygiene movement was attracting general attention. When a series of lectures on mental hygiene was given at Yale University, a hall large enough for all who wanted to come could not be found. This situation is easily explained by the fact that on the average one out of every two persons has in his family a mental problem. This is simply further proof that it is not only the insane and the partly insane who are in need of help. Mentally normal and even supernormal individuals deserve attention, from the point of view not only of preventing derangement, but also for the sake of making them more efficient and happy.

While the School of Medicine was working on this program the University was faced with the need of a psychiatrist to deal with problems of behavior that are bound to arise in a student body of 5,000 young men. The Connecticut Society for Mental Hygiene was also seeking a psychiatrist. The suggestion was made and adopted that a plan be worked out to meet the need of all three groups. To this end a program was drawn up. The funds necessary for this program and for the maintenance of a few patients were then sought and obtained.

Fortunately it was possible to secure the services of Dr. Arthur H. Ruggles in starting the work. It soon became evident that the establishment of a psychopathic hospital, modeled on several already in existence, would not constitute a satisfactory step in the direction of study-

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ing the sane and the supersane as well as the insane. Questions that needed answering were, Upon what does behavior depend?, What are the basic things upon which the understanding of behavior rests? Are there valuable resources at hand for the studies that should be made?

The School of Medicine of course had much to offer, for the mind must be studied in relation to the physical organism as a whole. However, the divisions concerned with the nervous system needed to be strengthened. There were also at hand other University divisions interested in the physiology of the nervous system—namely, the department of psychology and the institute of psychology. There was also a well-organized division for the study of child development. These various divisions were located in different parts of the city, and it seemed possible that they might wish to know each other better.

Consideration of these resources resulted in the idea of an institute of human behavior, for drawing together the work in the fundamental studies of the human organism, the mental hygiene activities, and the various psychological interests. The plan that was proposed called for a building to include among other facilities a few beds for individuals whose behavior the institute would study. The staff was not to confine itself to these but was to serve in the Dispensary and Hospital as well, and was to attempt to impress upon the medical student the importance of the psychic aspects of behavior.

The idea involved in this plan, proposed five years ago, has been fruitful not only at Yale, but elsewhere. Psychiatrists are more and more being offered the opportunity to study the reactions of patients in the wards and dispensaries of general hospitals. However, the plan itself could not be carried out in full at Yale because the available funds were insufficient for elaborating it to any extent.

In the meantime another significant development took place in the University. The Dean of the Law School, who as Secretary of the University, had been associated with the attempt to secure a psychiatrist for the student body, indicated a keen interest in the study of the causes underlying infractions of the law and the basis of its administration. He added to his staff a sociologist, a psychologist, and later an economist. This approach seemed to have much in common with the psychiatry program. Acknowledgment of the fact that the individual can not be studied as a psycho-physical organism unless he is also considered as a member of society, and that he can not be understood as a member of society unless he is studied as an individual, led to a joint program for the study of man.

This enlarged plan involved the establishment of a center, to be called the Institute of Human Relations. Here would be represented the fundamental biological and sociological sciences, flanked on one hand by such applied fields of biology as medicine, public health, and nursing, and on the other hand by such applied fields of sociology as law, business, industry, engineering, and religion.

This plan met with enthusiastic approval from the groups concerned and from organizations with funds at their disposal for educational purposes, with the result that the funds essential for launching the Institute project were obtained.

Facilities already available in the vicinity are not to be duplicated in the Institute building. The fundamental biological sciences, for instance, are already well established in the Medical School, except that there are no quarters for psychiatry. These are therefore to be provided in the Institute building. There will be fifty beds for individuals who will be considered guests of the Institute. Some of the rooms will be in suites with gardens attached, and every modern convenience, so that the normal activities of the individual will be interrupted to a minimal extent. The beds will be endowed as far as necessary in order that guests will not have to remunerate the Institute.

The guests will be selected from all walks of life. Some may be brought there because it is not desirable that they should be at liberty, and others may be selected from the general wards of the hospital simply because of better opportunities in the Institute for studying their problems. They may be referred from the outpatient department, from the juvenile court or from the criminal court, or they may come of their own accord. No one will come there against his wishes. All will be guests not only of the psychiatrist but also of the psychologist and sociologist.

In connection with these fifty guest chambers various recreational facilities and laboratories for making possible the measurement of subjective reactions by methods that have been successfully used in medicine, psychology, and industry will be provided. It is hoped that no work will be done in the Institute resting entirely on philosophical or hypothetical and nonmeasurable bases.

The building will also contain extensive laboratories for psychology, representing many of its specialties. Comparative psychology including comparative psychobiology, the study of the higher anthropoids, will remain in its present location for the time being, but the tropical breeding station now being built in Florida should greatly increase the opportunity in this field.

The Child Development Research Unit is to be housed in a wing of the Institute building, where the architectural scheme is designed to make an agreeable impression upon the child and his family. A limited number of children will be studied here intensively, but a very much wider investigation involving day nurseries and public schools will probably result from the work in this unit.

Sociology as well as psychology will be housed

in the Institute building. The staff in sociology will be a fairly large one, and the effort will be made to bring out the sociological implications in every study in such a manner that results in different fields may be co-ördinated and compared.

## II. EDUCATIONAL POLICIES INVOLVED

That, in a general way, is the history of the Institute of Human Relations. In considering the philosophy back of it, we must ask ourselves what is the object of life. Perhaps we can agree that the goal is human happiness, or, phrasing it differently, the greatest good to the greatest number. This object has been lost sight of in our recent rapid scientific progress. Things which should be a means to human happiness and usefulness have wrongly become ends in themselves.

Chemistry, physics, and other branches of science are important in themselves, but far more significant from the point of view of what they may contribute to human welfare. In order to realize their full significance and potentialities in this respect, the barriers between them must be broken down, and knowledge as a whole must be articulated.

Let us consider the steps which the Medical School can take in this direction. Generally speaking, the student of medicine today decides he is going to be a doctor before he knows what medicine is. He must do this, because it is necessary to pursue intensively for two years in college the subjects which are supposed to be pertinent to medicine. For some individuals going into medicine these subjects are more pertinent than for others. After two years of study he goes to a medical school and deals for a period of similar length with inanimate life, with test tubes, cadavers, guinea pigs, dogs, etc. There is nothing to help him get a humanitarian point of view. There is no reason why he should consider the patient as anything more than the subject for some technical procedure.

I do not believe that it is at all essential that the medical curriculum should be as drawn out as it is. I am certain that the knowledge that most doctors have of bio-chemistry and other fundamental sciences could have been given in a very much more concise and effective way than is usually the case. It cannot be expected that the student should know as much about each subject as the respective teachers know. The medical course should be cut down materially so that time will be allowed the student to perfect himself in the particular phases of medicine in which he is most interested.

At Yale, the plan is that during the preliminary years, before the student enters the clinic, he must get the fundamentals of the sociological sciences. This does not mean a series of lectures on theory, but a study of actual cases which will bring out the underlying principles of sociology. After the student has been exposed for two years to conditions as they actually exist in real life, while he has also been studying the principles of biology, he will go into the clinic. Here he will continue to study the psychological and sociological history of the patient at the same time that he is dealing with problems of physical health. In each of these three phases of work he will be under the direction of thoroughly qualified men of equal standing. Thus, no matter what his particular interest, the student will learn how to evaluate and interpret the patient as a human being.

Certainly the student will not become perfect in all of the fields which he must consider, but he will know enough to call in experts when they are needed, just as the internist today knows when to call on the surgeon.

The information gathered in the biological, sociological, and psychological examinations of patients will be used in the Institute of Human Relations in connection with other studies concerning the same group of individuals. Thus the investigation of the bankrupt retailer will not end with the court analysis, but will look into the physical, psychological, psychiatric, and social history of the individual. The same data will be used in surveys of delinquency, divorce, tuberculosis, etc. Thus, eventually, exact information from many angles will be gained concerning different primary problems and these will serve as controls against each other.

The University is now engaged in developing the department of psychiatry and mental hygiene. It aims to gather together a group of trained men, of more or less equal standing in the organization, representing many of the different aspects of the study of the mind, but interested in evaluating their different approaches from the point of view of the individual as a whole.

Every effort is being made to simplify the biological approach to the problems of conduct so that the lawyer may have some background in this respect. The effort will also be made to give the medical student an appreciation of the legal approach. Students representing such varied interests as law, medicine, and pure science, will rub elbows with one another. Through such contacts, fostered by the Institute, it is hoped that doctors will evolve who know man not only as a biological and psychic mechanism, but also as a social mechanism.

# NEW ENGLAND SURGICAL SOCIETY

## THE DIAGNOSIS OF RENAL STONE*

BY ARTHUR L. CHUTE, M.D †

IN the medical world as well as in the political and economic worlds adjustments must take place as new factors are found to influence materially the conditions with which we have to deal. Though it is now more than 30 years since Roentgen gave us a new and vastly improved method for the detection of renal stones, the knowledge that has accumulated as a result of the use of this method has not as yet been thoroughly assimilated by the medical world. In other words, our adjustment to the radiographic age, in so far as it regards renal stone, has not been complete.

Of the many important lessons that the use of radiography has taught us in regard to renal stones, one of the most important is the necessity for a considerable modification of the symptoms that it was formerly generally accepted that renal stones presented.

Naturally it is from a consideration of a patient's story of his trouble that one must formulate his first idea as to its probable nature and plan his campaign to prove or disprove his provisional diagnosis. The more accurate one's knowledge of the symptoms that a given condition produces, or may produce, the less the amount of time that will be taken up in arriving at an accurate diagnosis.

For generations medical men have accepted the traditional teaching that renal stones are attended with excruciating pain, either in the back, loin, or in the abdomen; that this pain is often attended with attacks of vomiting, exquisite tenderness over the involved kidney, and with urinary bleeding in a considerable proportion of cases. While all of this is true in some instances, it applies only to a certain type of renal stone, namely, the type that produces such an obstruction to the outflow of urine as to over-distend suddenly the kidney pelvis. The most usual place for this blocking to take place is at the kidney outlet or in a ureter. One of a number of typical cases of this sort, that I have seen, came under my care a few years ago; in the case of this patient, who was having excruciating pain, I was able to pass a ureter catheter past the obstructing stone and withdraw from the kidney pelvis between 50 and 60 c.c. of urine with immediate and complete relief of the patient's pain. The next day the same kidney pelvis would hold only between 6 and 8 c.c. of fluid, giving some idea of the degree of its overdistention and the reason for the patient's intense pain. It was this type of pain, renal colic, that we, as house officers, were taught to consider characteristic of renal stone and when to it was added hematuria, either appearing at the time of the acute attack or following exercise, the diagnosis of renal stone was considered pretty certain. Radiography has, as I have said, shown all this to be true, but it has gone a great deal further in that, it has shown us, that not alone acute pain, but that vague pain in the upper abdomen, in a loin, or in the back, even in rare instances, pain that is apparently typically gastric in type, may depend upon a stone in a kidney and disappear following its removal.

A few years ago an example of this came under my observation. The patient, a man of forty-nine, had suffered from pain in his upper abdomen, treated as "dyspepsia" for 20 years. On applying for life insurance it was found that he had pus in his urine. The cause of his pus was found to be a renal stone. The removal of the stone was followed by relief of his digestive symptoms. It has further been shown that some patients with fixed renal stones, who have no infection or perhaps a very mild infection, may have practically no pain; that such a patient may simply present a turbid urine as the sole sign of a renal stone. The past week I removed a stone as large as a big pea from the pelvis of the right kidney of a woman of 33 who had had several attacks of temperature and whose urine was found to contain a moderate amount of pus. She had never had any pain. Furthermore radiography has shown that a renal stone caught low in a ureter may, in very rare instances, show no symptoms other than a certain amount of bladder irritation.

We may add that the instances of renal stone in which the symptoms are vague are often those in which recognition and removal will be followed by especially good functional results, since in many instances of this type, the destructive process is not advanced. If not recognized this type may and probably will go on to the ultimate destruction, or very severe crippling, of the stone-containing kidney. This is, I believe, the end result, the natural course, in practically all untreated cases of renal stones.

The point that I wish to bring out especially is our complete dependence upon radiography for the recognition of a considerable proportion of renal stones, particularly in their earlier stages; the time when their removal will, other things being equal, be most likely to conserve renal tissue. To me it seems possible to see the

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day when we shall look upon a calculous pyonephrosis in much the same way as we look today upon a huge ovarian cyst; a condition that can come about only by a patient's inability or unwillingness to take advantage of modern medical knowledge.

In order then to avail ourselves to the greatest degree of the help that radiography can give in the recognition of renal stones, it is necessary that we have radiographic studies made not only of those patients whose symptoms strongly suggest the probability of renal stone, such as those presenting the symptoms typical of renal colic, but that we must likewise have radiographs made of practically all patients who present vague, abdominal pain of undetermined origin. Furthermore radiographs will occasionally show that the cause of a turbid urine that persists is a so-called "silent" renal stone, also that vague bladder irritation may in rare instances depend upon a stone caught low in a ureter. In spite of these unusual symptoms that renal stones may show, pain in varying degree is the common symptom of renal stone. This pain may be in the back, loin, or abdomen, and vary from the excruciating pain of typical renal colic to a slight grumbling backache. A history of hematuria of varying intensity will be present in about one-third of the patients with renal stones. Patients presenting symptoms of this sort should all be submitted to radiographic study. We must have our suspicions of renal stone aroused by the patient's symptoms but must make our diagnosis from radiographs.

In my opinion it is fair to expect that a *good* radiograph, in a patient who is not very fat, will show a shadow in practically all cases of renal stone, with the exception of some relatively small ones usually of the uric acid variety. There are, in my opinion, two requirements for a good radiograph in cases of a suspected renal stone: first, that it shall show the whole urinary tract; second, that it should show the kidney outlines and show them free from gas shadows. The first is a possible requirement, the second is possible in the larger number of cases but apparently not in all instances.

It occasionally happens that the symptoms of a patient suspected of having a renal stone, will be so sharply referred to one kidney that radiographs are limited solely to that immediate region. In two instances in my experience this radiographing of a limited area of the urinary tract with a negative result as regards stone has led to an unfortunate outcome; in both of those instances, because of the persistence of pain, the painful kidney was removed, only to find that later radiographs showed in each case a stone low down in the ureter of the corresponding side.

The fair presumption is that this produced the renal pain by back pressure and that the removal of the stone would have relieved it. In every instance in which a radiograph is taken because of suspected renal stone one should be sure that the first films cover the whole urinary tract, both sides, down to and including the bladder. Otherwise one will occasionally overlook a ureteral stone that is very low in position, or possibly a stone in the second kidney. There is a tendency on the part of some radiographers to try to get the whole urinary tract on one film. If the patient is a large person, it will occasionally happen that the lower end of the ureter is not completely shown, or if it is shown, it is slightly out of focus. I have seen instances in which this has led to the temporary overlooking of a stone, which was low in a ureter. It is far wiser, in my opinion, especially in a large patient, not to attempt to get both the pelvis and renal regions on one plate but to take two plates, one of the upper and another of the lower, part of the tract.

The other requirement of a good renal radiograph, is, that it shows the outlines of both kidneys and that the stone bearing area of each be fairly free from gas shadows. The kidney outline will allow one to rule out at once such shadows as do not overlie this area. Gas shadows it is true are not likely to be mistaken for stone shadows, since they are, as a rule, black instead of white, but they may overlie and hide the shadow of a small renal stone.

Some of the radiographs of patients whom we suspect of having renal stones will show no shadows. Others will show shadows. It is very important to know in what cases one may accept the absence of a shadow as indicating the absence of a renal stone. It has been shown repeatedly that small uric acid stones may not cast a shadow, even in a good radiographic plate. If lying in a collection of urine, as in a dilated kidney pelvis, a stone of this type of some little size may cast no shadow. Therefore, if one gets a negative plate in a patient whose symptoms have impressed one as probably due to stone, it is wise to pass a ureter catheter into the kidney pelvis and if it should contain any considerable amount of urine to draw this off and then make further films. If, however, this has been done and a good plate is still negative, one may feel pretty confident that the kidney contains no stone of any considerable size. It is always possible, however, to overlook a small stone, especially a uric acid stone and for this reason I feel it is well to tell a patient whose symptoms strongly suggest stone that he may pass a small stone at a later time. We may assure such a patient, however, that a stone which is so small that it does not show in a good radiograph will very rarely be what one would consider "surgical" and that even if one did see it, he would be very unlikely to advise its operative removal.

When one comes to consider the nature of shadows found in patients suspected of having renal stone, one has to differentiate those shadows that are actually due to stones and those that represent other more or less common condi-

tions: some accidental, others pathological. Broadly speaking, when we are considering the question of renal stones, we are concerned only with shadows that are seen to overlie the kidney outline. This is the reason for insisting that a satisfactory renal X-ray should show this outline, though as I have said, we do not always get it. Branched or coral-like shadows that are seen to overlie a kidney outline one can put down at once as renal stones. However, in the case of a considerable number of the shadows, that one sees overlying a kidney outline, as well as in a great number that are in the general course of a ureter one will be doubtful as to their origin. A few of these shadows will be in the intestines. One sometimes sees vague shadows, due to little hardened masses of feces and occasionally to bits of bone or other foreign substance that have been taken with food. It is not uncommon to find little bits of barium in the intestinal tract of patients who are investigated as to the possibility of renal stone; this, for the reason that in seeking the cause of obscure abdominal pain it is very common to make use of a barium meal or barium enema. If the investigation of the digestive tract has proved negative, the patient may then be radiographed as to the possibility of urinary stone. Under these circumstances bits of barium in the intestine may so overlie the stone-bearing part of a kidney as to raise a question as to the nature of a given shadow. For this reason, if one can foresee the necessity for radiographs of the urinary tract, it is wise to have these taken before gastro-intestinal plates are made, or if a barium meal has already been taken, to allow an interval of some days to elapse before renal plates are made. A large mass of barium, which may remain in the intestine some little time, may quite conceal the stone-bearing area of a kidney, while a small mass may give a shadow suggestive of stone. However, like all objects in the intestinal tract, these shadows will usually be found to have changed their position in two radiographs. If doubt still exists as to whether a given shadow is in the intestine or not, a vigorous clearing out of the bowel and more films will usually settle this.

The two types of shadows that are most difficult to differentiate from stone in a kidney are the shadows of gallstones and those of calcified abdominal glands. Gallstones naturally cause confusion only on the right side. Calcified glands are common and may be found all over the abdomen and in the pelvis as well. Along the lower course of the ureter, in the anatomical pelvis, we have not only the shadows of calcified glands but of calcified vessels, seen end-on, and of phleboliths to differentiate from stones in a ureter.

The density of the shadows cast by gallstones varies with the amount of calcium the stones contain. They also vary somewhat in size as well as in shape but the single ones, the confusing ones, are usually round. A few, however, have a density and shape that is compatible with that of a kidney stone. Most gallstones however, that we are called upon to differentiate from renal stones are easily recognized. The larger ones are made up of a series of concentric rings, the smaller ones of faint shadowy rings, and the very small ones of an accumulation of very faint rings. Some gallstone shadows will be seen to be clearly to the outside of the kidney outline. The Graham Test will sometimes demonstrate that a doubtful shadow, overlying the kidney outline, is really in the visualized gallbladder. In most instances of gallstones, the position and general appearance of the shadow or shadows are such as to make it evident that they are not renal stones. In an occasional case it may be necessary to have recourse to pyelography to determine the position that a questionable shadow bears to the renal pelvis and calices. I have stated before and still believe, it is much more common to see a gallbladder opened when the lesion is in a kidney, than to have a kidney explored when the lesion is a gallstone.

The shadow of a calcified abdominal gland, supposed to be the end result of a tuberculous invasion, is the commonest condition that I know to simulate the appearance of a urinary stone. Both the mesenteric and the retroperitoneal glands may be involved in this process. These patients complain of more or less abdominal pain, though it is supposed that the glands that cause the pain are not the calcified ones which the X-ray shows, but others in which the inflammatory process has not gone on to calcification but is still more or less acute. These shadows often raise the question of a renal or ureteral stone. They will, however, have a mottled or granular appearance that is quite characteristic; furthermore a mesenteric gland, being movable, will often change its position materially in two films. A calcified retroperitoneal gland is more fixed than a mesenteric gland but has the same mottling. In doubtful cases it may be necessary to make use of a radiographic catheter or a pyelogram or both to distinguish between these shadows of calcified glands and renal or ureteral stones. These maneuvers will, however, usually make the condition quite clear.

I know no definite way of differentiating a small round renal stone and a calcified tuberculous area on the surface of a kidney. In my experience a rare condition, but one to be let alone. If one should be so unfortunate as to cut down upon what he supposed was a stone-containing kidney, from the radiograph, and find that the shadow of the supposed stone was in reality that of a small round calcified area on the surface of the kidney, he should let it alone. On one occasion I curetted such a surface with the result that I had to remove the kidney shortly afterward because of a rapidly extending tuberculous infection. This patient eventually recovered but it was a striking example of unwise surgery. In a similar case seen in con-

sultation the outcome was less favorable, the patient dying of a generally disseminated tuberculosis.

When a ureteral stone is situated anywhere except in the pelvic portion of a ureter, its radiographic diagnosis is usually very easy, but even so, there are few ureteral stones that I care to cut down upon without verifying my diagnosis by the passage of an X-ray catheter. Usually this will be enough to show that the shadow of the catheter is in absolute apposition to the stone shadow, often held up by it. If this is not conclusive, an "offset" plate consisting of two exposures on a single film, the second taken after moving the tube a short distance laterally, will settle the question. If in such a plate the stone shadow bears the same relation to the radiographic catheter in both exposures one may be very sure that it is in the same plane with it and consequently in the ureter. A pair of stereoscopic plates will be helpful in differentiating a stone low in a ureter and a phlebolith. As a plate of this sort gives depth a properly made pair of stereoscopic plates will show that a phlebolith lies in a plane that is far behind the line of the ureter. This test is not to my mind any more conclusive than that of the "offset" plate and has the disadvantage that it requires a stereoscope to bring out the fact that the radiographic catheter and the suspected shadows are in different planes.

A more conclusive test may often be made by filling a ureter with pyelographic medium and withdrawing the catheter. A ureteral stone will often act as a ball valve and hold the column of pyelographic fluid above it very sharply; it may also show a distinctly widened ureter. These methods of differentiation will have to be used most frequently in the case of doubtful shadows in the lower part of a ureter; they will usually allow one to draw a very accurate conclusion, as to the nature of a given shadow.

The great difficulty in the recognition of many renal stones comes from the fact that we have not as yet thoroughly learned the mildness of the symptoms that radiography has shown us that renal stones oftentimes produce. We still look for excruciating pain as a necessary accompaniment of the condition. It is hard to bring ourselves to appreciate that almost any abdominal or back pain or almost any urinary abnormality may be due to a renal stone, that even moderate backache accompanied by a turbid urine, both common symptoms in women, may mean a renal stone. When once our suspicions have been aroused, however, good radiographs, assisted in a considerable proportion of cases by certain cystoscopic maneuvers, should make the diagnosis of renal stone sure and relatively easy. As only the finding of a characteristic shadow or shadows proven to be *in* the urinary tract justifies the diagnosis of renal stone; so only good negative x-rays will justify one in ruling out the possibility of a renal stone in cases of obscure loin, back, or abdominal pain or in patients presenting other obscure urinary symptoms.

## TREATMENT OF RENAL AND URETERAL CALCULI*

BY RICHARD F. O'NEIL, M.D.†

ANY discussion of the treatment of renal calculi must include that of ureteral calculi as well, as the latter are always of renal origin.

No time will be spent in this discussion as to the merit of drugs and so-called solvents for stone; desirable as such methods would be, they are at present without value except when combined with a large quantity of water as a prophylaxis against recurrence.

The treatment of renal or ureteral colic is symptomatic and consists of the administration of morphia hypodermically and application of heat, etc. These methods are, of course, only of temporary benefit and serve to tide the patient over until accurate localization of the lesion can be made by the methods already described.

For the convenience of discussing the treatment of lithiasis of the upper urinary tract the following classification will serve, and each will be taken up separately:

1. Unilateral renal calculi
2. Bilateral renal calculi
3. Unilateral ureteral calculi
4. Bilateral ureteral calculi
5. Renal and ureteral calculi

### *Unilateral Renal Calculi*

These may be considered under three groups: (a) those which from their size could be reasonably expected to pass; (b) those which obviously are too large to pass; and (c) those where extensive or complete destruction of the kidney has occurred from a large calculus or multiple calculi filling all of the calices,—this condition being known as calculus pyonephrosis.

a. *Small Calculi.* It is often a very difficult matter to decide from the X-ray shadow just how large a stone will pass or can be expected to pass. Some surprisingly large stones have come down the ureter contrary to all expectations. The indications for the removal of a small stone from the renal pelvis depend entirely on the amount of damage being done to the kidney and the frequency of acute attacks. If such a stone

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causes repeated attacks of renal retention and shows no tendency to pass, it should be removed particularly if infection even to a mild degree is present. When such a stone once engages in the ureter the picture is at once changed and will be considered under the management of ureteral calculi.

A small stone in the pelvis which is not giving any symptoms may safely be kept under observation but is always a possible source of trouble. Small stones in a calyx as a rule should not be operated on. They remain for a long time without giving trouble or increasing in size. Again, they are very difficult to locate surgically even with good X-rays and pyelograms, and I have more than once seen a good kidney so badly damaged in an attempt to get out a small stone as to require nephrectomy to control bleeding. They should be kept under observation by the X-ray and examination of the kidney urine for infection.

b. *Calculi which are obviously too large to pass.* Under this group are included the majority of unilateral renal calculi. They may be single or multiple and vary in size and shape from a round or triangular pelvic stone to the branched staghorn calculi filling one or more calices.

It may be generally stated that all such stones should be removed as the integrity of the kidney will be threatened sooner or later. If infection is not present the operative prognosis is all the better, as after infection has occurred both the growth of the stone and the resulting damage to the kidney from infection progress much more rapidly. If infection is already present when the diagnosis is made, it is hopeless to expect the infection to disappear in the presence of a calculus, and it is remarkable to see how the function of such a kidney which is always depressed to some extent by the presence of a stone will improve after its removal.

Not infrequently an unsuspected renal stone may be discovered in the course of a routine examination which may never have given any symptoms, the so-called "silent calculus." In such cases, other things being equal, that is the absence of a severe lesion elsewhere contraindicating operation, removal is to be advised on the ground that sooner or later it will cause grave damage to or destruction of the kidney.

Not infrequently one sees in the X-ray an elongated, triangular shadow at the hylus of the kidney. Such a shadow is pathognomonic of a calculus at the uretero pelvic junction and while perhaps not entirely obstructing, from its fixed position causes a much more rapid destruction of the kidney than would a much larger one free in the pelvis or one of the calices. Such a stone should be removed whether infection is present or not.

c. *Calculus Pyonephrosis.* When complete or extensive destruction of the kidney has occurred from a large stone or multiple stones, the only treatment is nephrectomy as it is useless to leave a saceulated non-functioning organ to invite continuation of infection and rapid recurrence of stone.

Provided the other kidney is capable of sustaining life and in these cases it has been doing all the work for years, nephrectomy is to be advised. An exception to this would be in patients of advanced age and poor general condition whose only discomfort is pyuria and in whom a severe operation would prove fatal.

Occasionally in very ill patients with large pyonephrotic kidneys, a preliminary nephrotomy is indicated to be followed by a secondary nephrectomy, but this is really the treatment of a pus kidney and not of calculus disease.

*Bilateral Renal Calculi*

This condition is naturally a much more complicated problem than the management of unilateral calculi, not only from the graver operative risks involved but due also to the fact that any person with bilateral lithiasis, either renal or ureteral, may at any time develop calculus anuria.

When each kidney is the site of a large branched calculus, the removal of which would involve the destruction of considerable renal tissue, no operation is to be advised. Fortunately such patients are generally of an advanced age and with care may live for years with little or no discomfort.

When both kidneys contain calculi of moderate size, either single or multiple, if the general condition is good or even fair, and the individual is young or in middle life, operation is to be advised, first on one side, then on the other, carrying out the principle followed in calculus anuria, of operating on the better kidney first, if that can be determined. Good results may be looked for in such cases with the preservation of renal function and a prolongation of life. Occasionally both sides may be operated at the same sitting. This will depend on the difficulties encountered and the time consumed in the first operation, the patient's condition, and the skill of the operator. When two operations are done, the interval between them is from two to several weeks, depending on the patient's condition. Should there be a marked discrepancy in the lesions on the two sides,—that is, a large calculus with considerable renal destruction on one side, and a small calculus on the other, following the same rule, operation should be urged on the better side to preserve the renal integrity as long as possible; the treatment of the other side to be determined by the indications in each individual case.

Small bilateral calculi, either single or multiple, which may pass are to be treated expectantly as in unilateral cases, always having in mind the possibility of calculus anuria, and

being ready to operate if one or both sides become obstructed.

*Unilateral Ureteral Calculi*

The indications for operative interference in this condition are generally pretty clear. If the calculus is making progress down the ureter, it should be left alone in the hope that it will pass into the bladder provided, of course, that the progress is definite and not so slow as to damage the kidney. Should, however, the calculus become arrested, it must be removed promptly by some method, as owing to the small diameter of the ureter, back pressure and damage to the kidney from infection may rapidly ensue. Intravesical manipulations through the cystoscope are first to be tried. They are more apt to succeed in stones impacted in the lower third of the ureter than in those at a higher level. These methods failing, open operation is indicated. These methods will be discussed more fully later.

*Bilateral Ureteral Calculi*

This is a condition which admits of little or no delay as even if absolute obstruction is not present, the condition is one of potential calculus anuria. The calculi should be removed by the quickest method depending, of course, on their position in the ureter. Here, as in bilateral renal calculi, both sides may be done at the same sitting if the patient's condition warrants. If two operations are done, the interval between them should be shorter than in bilateral renal stone as the indications for prompt relief are generally more urgent.

*Renal and Ureteral Calculi*

It sometimes happens that there is a stone in the ureter and kidney of the same side or a stone in one kidney and the ureter of the opposite side. In the former condition the stone in the ureter in the majority of cases is the most important lesion and should be removed first unless the ureter stone is high in the ureter the removal of both at one sitting is too extensive an operation, the renal stone to be removed at a later operation. The exception to this would be in a case where extensive or complete destruction of the kidney had occurred,—here nephrectomy is indicated. If the stone is in the lower portion of the ureter and not readily accessible, it may be left and will give no further trouble. When there is a stone in the ureter on one side and one in the opposite kidney, the condition does not differ materially from bilateral ureteral calculi. The procedure here should be to remove the ureter stone on the principle of relieving, presumably, the better kidney first.

*Operative Treatment of Renal Stone*

The operations which may be employed for relief of this condition are:

1. Pyelotomy
2. Pyelonephrotomy
3. Nephrotomy
4. Nephrectomy

The method for exposure of the kidney is the same for all of these operations. We employ an oblique lateral loin incision beginning one-half inch below and parallel to the 12th rib and carried forward as far as need be. The kidney and pelvis and upper portion of the ureter are exposed to their fullest extent.

*Pyelotomy and Pyelonephrotomy*

Pyelotomy is the operation of election for stone in the pelvis and the majority of those in the calices can also be reached and removed through this incision.

The kidney having been exposed and delivered as far as possible, the pelvis is palpated by the thumb and finger, a calculus in the pelvis can generally be readily detected except in the intrarenal type of pelvis when it can only be made out after opening the pelvis and introducing an instrument. The pelvis is now steadied between two Allis clamps and incised on its posterior aspect. It sometimes happens that because of the position of the stone, or of some abnormality of the pelvis, incision of the anterior wall is preferable; in this case one must be on the lookout for the main renal vessels.

The incision is made perpendicularly to the long axis of the kidney, care being taken not to extend the cut into the renal tissue to avoid injury to the circular artery which, if divided, causes troublesome bleeding. The incision is enlarged in the direction of the ureter and the calculus grasped with appropriate forceps and removed. A bougie, No. 10 or 12 French, should be passed down the ureter. The incision in the pelvis is closed with fine catgut suture and, if convenient, a piece of fat is fastened over it. The wound is closed with a rubber tissue drain. This drain should remain at least a week. These pyelotomy wounds frequently do not leak urine for several days and if adequate drainage is not provided, urinary infiltration and abscess formation will result.

Pyelotomy wounds rarely result in permanent urinary fistulae unless there is some obstruction below. If renal leakage persists for two weeks, or even less, after operation, a ureter catheter should be passed and the kidney placed on permanent drainage for a few days. This will generally suffice to close the fistula.

Should the stone be located in one of the calices, it can generally be grasped and removed through the pyelotomy wound by the means of proper curved forceps. If, however, it is too large to be delivered without damaging considerable kidney tissue or breaking the stone, which is undesirable, it is better to remove it through the cortex of the kidney. This is most easily done by passing a curved clamp through the pyelotomy incision into the calyx and cutting down on it through the substance of the kidney, and the stone removed through the combined openings. This is known as pyelonephrotomy and involves the cutting of a small amount of renal tissue only, the kidney incision to be closed

by suture. It not infrequently happens that in spite of good X-rays and pyelograms, it is extremely difficult to locate a stone in the calices or renal substance at the time of operation. Here the portable X-ray is of great value and on several occasions has served me well. It is also of great value in determining whether or not all small stones or fragments have been removed. One must always at least remove as many stones as there are shadows in the X-ray plate. You will sometimes get more as the superimposed shadows of multiple calculi may resemble one stone.

*Nephrotomy*

This may be either partial or complete. Occasionally one can tell from the X-ray or pyelograms that a shadow has no connection with the pelvis but is near the cortex. Such a stone is much more easily removed by nephrotomy than pyelotomy, particularly as the renal cortex is apt to be much thinned at this point, so that incision destroys little renal tissue. This is known as partial nephrotomy and has its definite indications.

Extensive splitting of the kidney or complete nephrotomy is a very different procedure and since the advent of the X-ray diagnosis of the size and position of calculi, it has not been employed as often as in the earlier days of renal surgery. At best it is a hazardous operation and should be avoided if possible. Some cases of branched calculi involving several calices cannot be removed by any other method. When it is desirable to open the kidney substance to any considerable extent it should be done by means of a wire introduced through the kidney in its long axis by means of a flat liver needle. The kidney tissue is divided by a sawing motion, this undoubtedly causes less bleeding than cutting through the kidney tissue with a knife.

The dangers of this operation are primary or secondary hemorrhage and necrosis of a certain amount of renal tissue following the extensive suturing made necessary by the division of so much renal substance. In case of the former, prompt secondary nephrectomy may have to be done as a life saving measure. In case of the latter, nephrectomy may be indicated. But mummification and atrophy of a considerable amount of renal tissue may take place without causing total destruction of the organ.

If the kidney is widely split, a rubber tube should be placed in the middle of the incision to the renal pelvis and the kidney sutured on each side of it. This serves the triple purpose of preventing hemorrhages, as a means for the escape of blood clot from the renal pelvis and of providing adequate drainage for an infected pelvis.

*Nephrectomy*

Little need be said as to the technique of this operation which is familiar to you all, beyond the fact that nephrectomy for calculus pyonephrosis may be a difficult and tedious operation. These kidneys are often much enlarged and densely adherent to the surrounding tissues from repeated attacks of perinephritis. Owing to this, injuries to the peritoneum, pleura, and even the large bowel, occur more frequently than in nephrectomy for any other lesion. Such accidents, however, if discovered at the time and promptly closed by suture, do not necessarily give trouble.

*Operative Treatment of Stone in the Ureter*

This consists of various intraureteral manipulations through the cystoscope to dislodge the stone and open operation. Of the former, the simplest procedure is the passage of ureter catheters of various sizes to or beyond the stone, if possible, in an attempt to change its position. The injection of sterile oil or liquid vaseline may be tried but in my opinion is of little value. The catheter or catheters may be kept in place in the hope that their presence will cause a dilatation or relaxation of the spasm of the ureter.

As a rule only calculi in the pelvic portion of the ureter are suitable for such attacks but occasionally a stone high in the ureter may be pushed back into the renal pelvis, thus relieving temporarily an acute retention.

During the last few years a number of very ingenious dilators, forceps, probangs, corkscrew tip catheters, electrodes, etc., have been devised for use through the operating cystoscope for the removal of calculi from the ureter and all have met with a certain amount of success in skilled hands. This is, however, a highly specialized procedure and not for the occasional cystoscopist.

The passage of a stone just at the vesical orifice of the ureter may be hastened by splitting the ureteric orifice. This is best done with a fulguration electrode. If definite progress is not made by these intravesical maneuvers after a reasonable time, they should not be persisted in as the resulting oedema and trauma from repeated instrumentation will invite infection and make the condition worse than it was before. They are particularly applicable in the very obese, or in persons who for any other reason are poor risks for open operation.

*Operation for Ureteral Stone*

This may be divided into operations for calculi in the upper third, the mid-portion, and the lower third of the ureter. For those in the upper portion the ordinary kidney incision is used and the ureter exposed. The calculus is readily palpable. Care should be taken to grasp the stone with the fingers to prevent its slipping back into the renal pelvis. An incision is made in the long axis of the ureter and the stone removed. In removing any ureter stone, particularly if it has been impacted for some time, it is better to make the incision in the ureter above or below the calculus rather than immediately over it as ulceration of the ureter may have

occurred which may result in poor healing or later in stricture formation. The ureter is to be closed by interrupted suture and a rubber drain left in for at least a week as in pyelotomy operations.

Persistent urinary fistula is more common after ureterotomy than it is after pyelotomy. If an indwelling catheter does not result in its closure, a secondary operation will have to be done, in which case the ureter is generally found to have been angulated or pulled out of position by scar formation or adhesions. Freeing of these will usually result in a cure. Nephrectomy rarely will have to be done.

*Calculi in the Mid Portion of the Ureter*

Fewer stones are arrested in this portion than at either end. An oblique loin incision lower than that for kidney operations is employed. No difficulty will be experienced if one remembers that in reflecting the peritoneum toward the midline, the ureter goes with it, thus avoiding a fruitless search for it on the posterior abdominal wall.

The approach to calculi in the lower third is either by a suprapubic midline incision reflecting the peritoneum off of the summit and lateral wall of the bladder until the ureter is reached, or by a curved incision parallel to Poupart's ligament and just above it beginning at the crest of the ilium and extending to the border of the rectus. This is known as the Gibson incision. The peritoneum is reflected inward and the guide to the ureter is the bifurcation of the internal iliac artery at which point the ureter crosses and dips into the pelvis. In each case the ureter is deeper in the pelvis than one expects.

Just before operating on any ureteral, or renal stone, for that matter, it is well to have an X-ray taken, as calculi, particularly those in a dilated ureter, may change their position to an amazing extent. This may save much embarrassment to the operator, to say the least.

*Operations for Recurrent Stone*

During my last service at the hospital. it was my fortune or misfortune to have two patients return, each with a large pelvic renal stone. each of whom had had a previous kidney operation,—one six years, the other eight years before. One was for stone, the other for hydronephrosis. In both of these cases at operation the kidney was found firmly adherent to the muscles of the posterior abdominal wall, incorporated with them, in fact. In one case my incision in dividing the muscle went directly into the renal tissue which caused such profuse and troublesome bleeding as to require nephrectomy. Fortunately the kidney was of low functional value. In the other case the kidney was equally adherent but with the previous experience in mind I approached the kidney from below upwards and did an easy pyelotomy. I cite these cases to illustrate the difficulties and dangers of secondary operations on the kidney.

Calculus anuria is a serious condition and may occur at any time in those patients who have bilateral lithiasis. All methods to reëstablish the function of the kidneys should be tried—heat to the loins, subcutaneous saline solutions and diuretics. These failing, operation must be resorted to. As has been stated, the principle to go on is to relieve the presumably better kidney first. While in bilateral stone without anuria some idea may be gained by the split phenolphthalein test, as to which is the better kidney; when anuria is present we have nothing but the X-ray shadows to guide us and must make our decision as best we can.

In closing, a word may be added as to the prevention of the recurrence of stone. That many so-called recurrences of stone are really due to the fact that small fragments or small calculi have been left behind cannot be denied. Therefore the greatest care must be exercised to remove all calculi and small pieces that may have been broken off. A thorough lavage of the inside of the kidney with a small catheter and a piston syringe is the most effective way of dealing with the latter. In doubtful cases checking up with the portable X-ray is indicated if practical. Another point is the clearing up of any residual infection in the renal pelvis by means of postoperative renal lavage. This I believe to be an important procedure and one that is seldom carried out. The forcing of water, the administration of urinary antiseptics and a proper diet, all have their proper place in the prophylaxis of urinary calculi.

## SOME OF THE RESULTS OF RENAL CALCULUS*

BY J. DELLINGER BARNEY, M.D.,† AND J. LAXTON WATSON, M.D.†

IN discussing the results of renal calculus certain factors must be taken into consideration. In the first place one must include not only renal but also ureteral calculi, for the reason that the latter, with extremely rare exceptions, have originated in the kidney but are lying in the ureter at the time when the patient is seen. Another point to be borne in mind is that some of the results reported in any investigation like this are quite as much those of the operation as of the stone itself. I refer to persistent fistulae, hemorrhage and other complications on the one hand and to death on the other.

As the basis of this communication we have

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taken the records of 106 patients admitted to the Urological Department of the Massachusetts General Hospital during the past 5 or 6 years. The patients have been in no way selected; so long as the record included sufficient data to be of value it has been included.

In looking over these records we were at once impressed by the fact that 20 of the patients were re-entries, one of them having been admitted on six occasions, the others from 2 to 3 times. It was equally impressive to find that there had been 31 operations on the urinary tract previous to the final admittance to the hospital. These operations included 18 pyelotomies, 5 ureterotomies, 3 nephrectomies, 2 litholapaxies and 1 nephropexy. Incision and drainage of a perinephritic abscess had been done in 2 instances. The fact that such a large number of operations had been necessary to free the patient from symptoms referable to the same cause, namely urinary lithiasis, demonstrates again that this disease is one of the most serious, not to say persistent, to which the flesh is heir. For we must remember that while a certain number of patients seem to show no untoward effects, either local or general, from a renal stone, it is also true that in the majority of instances the presence or the recurrence of calculi invites infection, impairment of function or complete destruction of the organ in which they form or to which they pass, and that what damage is not done by calculi may sooner or later result from repeated operations regardless of the skill and dexterity of the surgeon who performs them.

Another feature of interest among our re-entries was that appendectomy had been performed in 11, cholecystectomy in 3 and hysterectomy and ventral suspension in 1 each. While we do not imply that these operations had all been performed in an attempt to relieve symptoms which in fact were caused by urinary calculi, we are certain that in many this was the case. Some years ago it was almost an adage in the Out Patient clinic that if a patient appeared with abdominal pain and with an appendectomy scar he had a renal calculus. While this method of making a snap diagnosis has been abandoned, it is still true that renal calculi may and often do produce symptoms so closely resembling those caused by disease of other abdominal organs as to mislead even an experienced surgeon.

In discussing the results of renal calculi we shall deliberately avoid making more than passing reference to such matters as infection of the urine, dilatation of pelvis, calices, or ureter, hematuria, pain, depression of renal function, etc., for the reason that these items have been dwelt upon *ad infinitum* by numerous writers and can be found in any good monograph or text book. We shall dwell rather upon how our patients have fared in our efforts to give relief. In doing so we shall state the simple facts, some of which, as you will see, do not reflect favorably upon us. All we can say is that if things do not always go right with a group of conscientious and well-trained urologists they are not apt to go better with men of less experience. It should be remembered, however, that many of these cases were operated upon by some of the junior members of the staff, a fact which may well account for certain of the results here recorded. Finally, we will call your attention to the fact that the results of operations on such patients as enter a charity hospital are by no means as brilliant as those obtaining in private practice. We earnestly hope this report will induce those in other Clinics to give an equally truthful exposition of their results.

Among the 106 patients, 132 operations were performed. There were 56 pyelotomies, 39 ureterotomies, 26 nephrectomies. The ureteral orifice was cut and dilated through the cystoscope in 4 cases and a perinephric abscess was drained in 1. From this it is seen that in our clinic as elsewhere pyelotomy is the operation of choice for the removal of stone from the kidney. And I should say what I mean by pyelotomy is to a certain extent pyelonephrotomy.

Seven of our 106 patients died in the hospital, 1 of pulmonary embolism a week after nephrectomy; 2 of uremia, each having bilateral renal calculi, one on the third day after pyelotomy, one on the thirteenth day after ureterotomy; 1 of perforating gastric ulcer two months after ureterotomy; 1 of broncho-pneumonia 3 days after a very difficult pyelotomy which involved considerable mauling of the kidney; 1 of wound sepsis and pneumonia 1 month after pyelotomy. The seventh patient died of anuria and uremia without operation, he being practically moribund at the time of admittance. Looked at a little more closely and in a natural effort to cast off responsibility for this mortality it is seen that in no case can the death be fairly ascribed to poor technique or faulty judgment. The fatalities were with but one possible exception due to the well-recognized accidents of any major surgical procedure.

In two of our cases the pleura was accidentally opened in doing a pyelotomy, once on the left, once on the right side. One of these was done by one of the writers (J. D. B.) who has had the misfortune to open the pleura in two or three other instances, each time in the course of a pyelotomy. In no case has demonstrable, or at least more than temporary harm resulted, although one patient in this group left the hospital with a pneumothorax still present. In another case a thoracentesis was done daily for several days, each time about 500 c.c. of air being evacuated, the lung finally expanding to a normal condition. While such accidents are annoying

in that they necessitate spending a considerable length of time for their repair, and while they may cause serious consequences, it is difficult to see how they can be avoided. It is well known that in certain individuals the pleura may, and often does, descend below the lower border of the twelfth rib. It is also practically invisible and not palpable especially in the midst of sometimes rather free bleeding from the intercostal veins which are frequently divided in the angle between the last rib and the spine. But after a few experiences of this sort one learns to be on guard for such an eventuality and as a consequence these accidents are less likely to happen. We believe, however, that it is one of the important untoward events that may occur even in experienced hands.

Urinary fistulae resulted from our operations in 15 instances. We hasten to add, however, that six of these closed spontaneously (one patient meantime passed a small stone) within a month or six weeks after operation. In two cases the fistula was closed by a second operation. In one the fistula followed ureterotomy for a stone at a point opposite the lower pole of the kidney. Various attempts were made to close it by the passage of ureteral catheters and bougies through a cystoscope. These efforts failing and the leakage showing no sign of abating the opening in the ureter was resutured. At this time no demonstrable cause for the fistula, other than an undue thickening of the ureteral wall could be found to account for its failure to close. In the second case the fistula followed ureterotomy for a stone near the bladder and finally was terminated by nephrectomy after 6 weeks. The kidney was practically destroyed by infection, this condition being undoubtedly present but undemonstrable at the time of the ureterotomy. Seven patients were discharged from the hospital with urinary fistulae of greater or less degree, five following operations on the kidney and two subsequent to operations on the ureter. These patients have been lost track of but except in two instances it is fair to assume that the fistulae eventually closed. In these two cases the presence of stone in the kidney in the one, and in the ureter in the other will probably perpetuate the sinus. Pyelotomy accounted for 9 of the 15 fistulae, ureterotomy for 6, 5 of these being on the lower portion of the ureter. It has long been the custom in our clinic to suture all incisions in both renal pelvis and ureter, although we are aware that many surgeons leave the incision to take care of itself. Oftentimes the placing of a suture is not only a matter of some difficulty but also may consume quite a lot of time. We have felt it worth the effort however, in the belief that if urinary leakage should occur it would be of shorter duration than would be the case if the incision were not closed. Most important of all we believe that certain other factors must be considered and done away with if possible. Firstly, infection of the kidney, which may be overcome or at least reduced by draining the pelvis by means of a tube, this being continuous with or connected with another tube inserted into the pelvis through the renal cortex. Through and through irrigations can be carried out by this means and after the removal of these tubes prompt closure of the sinuses is the rule. Secondly, one must be very sure that no stones remain in either kidney or ureter or that in the latter there is no interference with the flow of urine from bands of cicatricial tissue, strictures, or aberrant vessels. One can obviate trouble in the first instance either by extremely careful examination of the interior of the kidney with finger or probe after the removal of what seems to be the last or only stone. One of us (J. D. B.) has remarked elsewhere that he did not believe it was humanly possible to remove all stones from the kidney in every case. The situation of a small stone in a remote or narrow-mouthed calyx, the coating of a stone with mucus, pus or fibrin and probably other factors all combine to bring about a well-nigh insuperable obstacle. Although by no means infallible we find the best method to employ for the detection of every stone in the kidney is that of slipping a film behind the delivered kidney and having an X-ray of the organ on the operating table. When conditions are perfect this is most efficient, but conditions are often not perfect. The renal pedicle may be short or the kidney may be very adherent, the net result being that its delivery out of the abdomen is impossible or unwise to attempt. As a consequence the resulting film may be apparently negative or very unsatisfactory. At certain clinics dependence is placed upon the fluoroscope instead of the film, but here again the same obstacles may interfere with its success. In the case of the ureter, no operation for the removal of a stone from its lumen can be called complete which does not include the passage of a large flexible bougie throughout its length into the bladder, or which does not also include examination for possible sources of obstruction of its lumen.

Under no condition should a patient be allowed to leave the hospital without a post-operative X-ray of the urinary tract. Even if various evidences of remaining stones are lacking such an X-ray may show that a stone still remains, this being especially true of the kidney. While it might not be necessary or justifiable to advise operation should an unsuspected stone be disclosed, one at least has definite post-operative data of the greatest value. Without this information a stone shown by X-ray some time later might be a recurrence on the one hand, or a stone that was not removed by the operation on the other. No one could say which it might be yet it seems impossible in the routine of a service like ours to have this simple procedure carried out in every instance. In fact it has been done, so far as the records show, in but 43 cases,

and in 17 of these (nearly 50%) one or more stones were still remaining. While in some of these cases there were extenuating circumstances, such as the poor condition or collapse of the patient which made further exploration impossible, or in the case of a ureteral calculus only cystoscopic manipulations were undertaken, it is not a good record. The one crumb of comfort which this affords, however, is that we at least shall know whether the stone found in still later films is a recurrence or a left-over. Bad as the situation is, we make no effort to conceal it as we believe the facts should be known, not only as to the extreme difficulty and even the apparent impossibility of completely removing all calculi from the kidney, but also as to the ease with which the best of intentions come to naught. All we can hope is that this exposition of the situation will awaken not only us but others to the ineffectiveness of the present régime.

Still another weakness has been emphasized by this investigation—a weakness which we knew existed but which seems worse each time it is brought to light. This consists in the inadequate methods which most of us employ for following up patients after operation for ascertaining late results. For example only 52 of these 106 patients have been seen or heard from since operation. While it is true that this figure could have been greatly increased had there been sufficient time to go about it a system should be devised and carried out whereby one could at any time go to the records and find therein adequate data every six months or so after operation. Of the 53 patients of whom we have information, 35 were definitely improved by their operation. This does not mean that the urine was clear and sparkling or that they were in the pink of condition. They were, however, comfortable and able to go back to their work. On the other hand, 17 patients were not improved by operation, their disability often being due to pain or to general debility from urinary infection. A closer inspection of those who had been admitted to the hospital more than once (20 in all) shows how frequently the stone-bearing patient is harassed not only by stones on the original side but also by stones on the opposite side. Six of the re-entries were operated only upon one side, their other admittances to the hospital being either for other conditions or for observation and study either before or after operation. Seven patients were operated upon two and sometimes three times for the same condition, these stones being either actual recurrences or those which had been left over from a previous sitting. Five cases were admitted more than once for calculous disease on both sides, this condition existing either at the time of their first operation or developing subsequent to it. As a matter of fact these 20 re-entries may well be included among those of whom we have follow-up information and they give a much more detailed picture of the life history of the sufferer from urinary calculi than can be obtained in any other way.

In closing these remarks we wish to plead most earnestly for a still more concerted effort on the part of the profession to throw further light on the cause of urinary calculi; to increase the efficiency of the methods by which one can be certain that all stones are removed at the time of operation and finally to realize the extreme importance existing in perhaps no other condition except malignant disease, of keeping all these patients under careful and continuous observation.

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## Discussion

Dr. John H. Cunningham, 46 Gloucester Street, Boston, Mass.: Dr. Chute asked me to discuss his paper and I reminded him that at the meeting at Manchester two years ago I thoroughly disagreed with his dictum. He said that unquestionably I have seen the light today and will do better now.

I find nothing in his paper for debate. All I can do is to emphasize certain points that he has brought out.

In the first place, I think all of us when we hear of renal stone, think of pain and Dr. Chute has explained the acute pain of renal calculus as a plugging of the outlet of the kidney pelvis, the intra-renal tension being the cause of the pain.

Of course, the diagnosis of stone is not always clear without the modern methods of examination. One thing which he did not mention and which has confused me at times in regard to pain simulating renal stone, is the passage of showers of crystals. The presence of these in the urine strongly suggests stone and no stone is found in the complete examination.

We have heard this afternoon of the other errors where pain is an important matter. We had, I think, this morning a very striking example of it in Dr. Truesdale's clinic, in the kidney case he did which was admitted for retroverted appendix and, by modern methods, the diagnosis was made.

Errors have been mentioned and, of course, they do occur, but pain is important and should not be accepted as stone in the kidney even with the symptoms strongly suggesting it. without complete examination. Pain in the kidney does not always cause such a diagnosis. We have found multiple stones, sometimes of both kidneys in the parenchyma with no history.

Another matter that he spoke of was cross pain, operating on the kidney because of the pain while the stone is in the other side. I saw a striking and sad example of that by a surgeon operating for a suspected stone in the kidney but none was found. When I saw him the plates were present and he had placed the

plate so that the pain corresponded to the side in which the pain existed and he had turned the plate around so that the shadow appeared to be on the other side. The patient died and the stone was as shown in the plate. So, one point is to bear in mind that the cause of pain does exist and not try to make it correspond with the clinical symptoms.

He spoke of the digestive disturbances in some cases associated with stone. I think it is a case of chronic uraemia and investigation shows there is renal impairment. The blood chemistry shows a large nitrogenic tendency and the pain being from the faulty elimination from the kidney.

He spoke of other shadows, paramitomes, glands, and gallstones, which can be properly interpreted usually by the complete examination. The matter of gallstones is quite as confusing as any of the others when the confusion exists, and I recall watching one of my friends, one of the best known genito-urinary surgeons, operating on a case like kidney shadow, pus in the urine with a shadow, evidently that of a stone in the kidney, but there was no stone found in the kidney.

The resident surgeon asked for permission to nick the peritoneum and examine the bladder. There was a stone in the gall bladder.

Another important feature was the fact that the genito-urinary surgeon felt so highly specialized in his own field that he waited over three-quarters of an hour for a general surgeon to come and remove the stone from the gall bladder. I don't want to open up the matter of specialization in surgery, but it seems as if anyone qualified to operate on a stone in the kidney should be qualified to act in any such emergency.

I agree with Dr. Chute that we see more gall bladders operated on for stone in the kidney than vice versa, so the general surgeon is at fault sometimes.

There are many things I should like to speak about, but time does not permit. I think the paper is extremely important chiefly because he points out the features from which we may get in error. I think that if we digest this paper carefully, we will make fewer errors in consequence of having heard it.

Dr. Clyde L. Deming, New Haven, Conn.: *Members of the Society*—Dr. O'Neil has very logically arranged the treatment of kidney and ureteral stones and I think that he has outlined the surgical procedure for the treatment of these conditions as we usually do them.

I have been interested in the last few days in reviewing the kidney and ureteral stone cases which have passed through our clinic during the last six or seven years. I find in our records 190 cases; 120 of these had renal stones, 13 of which showed bilateral kidney stones; 51 cases had stones on the right side; 56 on the left; 76 cases had stones in the ureters; 42 in the right ureter and 34 in the left ureter.

The treatment as outlined by Dr. O'Neil was easily applied to this series of cases. Fifty-five (55) or approximately one-fourth of these cases passed their stones voluntarily. By "voluntarily" I mean that they either passed them before cystoscopic examination was made and gave a typical history of renal and ureteral colic, or had passed stones after one simple cystoscopic examination.

Thirty-seven, or approximately one-fifth of the total number of cases passed their stones after manipulation of the stone had been made by use of bougies, catheters and injections of olive oil. Eighty-seven cases were operated on. Eight required a nephrectomy because of complicating pyonephrosis. There were eleven cases who never returned, so we have no data on these cases. There were five cases with complete anuria, and in all of these cases there was found only one kidney which was functioning previous to the sudden and complete block. When you have a complete and sudden block, there is usually only one kidney functioning and that has become blocked by a stone.

In the different procedures of operations I agree with Dr. O'Neil that we should always do a pyelotomy wherever possible and that in a few cases where the stone lies near the cortex or the cortex has become markedly thin, one can very easily puncture that kidney with a clamp and remove the stone. However, the enlargement of the pyelotomy wound directly on the kidney results quite often in severing quite a large vessel, and Dr. Quinby has emphasized that point, so that to avoid cutting any of the vessels I would recommend enlarging the pyelotomy wound towards the lower pole.

I would support this probably by some experimental work which we have been doing on dogs where we have made various types of incisions, closed them, removed the kidneys later on and injected the circulations with colloid substance, so as to produce an accurate model of the arteries and veins. These show when the incision is carried directly to the lower pole and is sutured preferably by mattress sutures from the cortex to the pelvis and back, that we get very little kidney destruction. I would recommend that suture also in those cases where the transverse or even longitudinal nephrotomy is done. One can use that suture and avoid transfixing the kidney which in many cases destroys much of the kidney circulation and lessens the function.

We have been using the X-ray at operation in as many cases as possible. It is certainly a great help and discloses small calculi which we would otherwise leave behind. The drainage of the kidney through the pelvis or a nephrotomy wound at operation is an important feature. The kidneys can be irrigated frequently for several days and small fragments removed, thus

preventing if possible, recurrences, by removing small fragments.

Postoperative treatment of the infected kidney is important. Where they are infected we give them pelvic lavages, and dilate the ureters for quite a long period of time, some for as great a time as three or four months and often for more than a year. I have seen infections clear up after a year and a half or two years of treatment after the stone has been removed. Forcing of fluids is of paramount importance and I am sure that we should urge our patients to gain the habit of hydro-prophylaxis. (Applause.)

DR. WILLIAM C. QUINBY, Peter Bent Brigham Hospital, Boston, Mass.: *Mr. President and Members of the Society*—The choice of this subject in my opinion is a very timely one as I am sure you will all agree, for the reason that the medical and surgical treatment of patients suffering from stone in the kidney is by no means as brilliant as we would wish, and we hope by no means the last word has yet been said.

I have been asked to discuss Dr. Barney's paper especially and first I wish to offer him my personal compliments in having the courage to state the results, even though not brilliant, from an important clinic; results which I am sure are no better and no worse than those in most other clinics of that type. In other words, in some respects the result of an operation for renal lithiasis today is, in my opinion, deplorable.

Recognizing this fact myself, I began trying several years ago to see in what aspects we might improve the situation. There exist certain patients in whom it is impossible by any method to prevent recurring infection, increase of remaining stones, and so forth; as Dr Barney has illustrated. On the other hand I feel if we change our viewpoint a bit in regard to the patient bearing a urinary stone, that matters will be somewhat helped.

In the first place, what can be done toward prevention? At present we know so little about colloid chemistry and the actual formation of stones that we have no direct attack along chemical lines as yet. The two things we can do our best to influence are the persistence of infection in the urinary tract on the one hand and the persistence of stasis on the other. Those two factors we know to be definitely productive of stone formation, and in many instances these factors we can modify or remove.

In other instances, as in the case where there is no infection, there is very little one can do from the point of view of prevention, either in increase in size of the stone or appearance of stone.

In regard to the actual removal of a stone by operation, it has been the experience, I think, of all of us a few or many times to find such calculus very hard to locate. We have had this experience ourselves, and also have seen others struggle, maybe in vain, to find a stone even after the kidney was exposed. The reason for this, in the first place, is that the average normally formed kidney does not often have a stone in it. Some do when they are badly infected, but many kidneys bear stones because they are in some degree mal-developed. Therefore, when one sees in an X-ray film the shadow of a calculus lying in the region of the pelvis, it does not follow by any means that it will be easy to take it out by pyelotomy, because frequently it will be entirely surrounded by renal parenchyma, or important aberrations of vessels may be present. It is, therefore, necessary to devise some method of accurately locating the stone after we have hold of the kidney. The simplest way to do this is to use the evidence rendered by the X-ray. One can examine the kidney exposed at operation by the fluoroscope, or can take a film. The latter method under our own circumstances has appealed more than the fluoroscopic one. Certainly, unless a kidney stone is definitely and easily palpable, I feel that it is very unwise to go searching for it until it has been located by a previous X-ray film or fluoroscopic examination.

Having thus definitely located the stone, then what is it necessary to do to get it out? I entirely disagree with the operation of splitting the kidney from end to end. I feel that separate incision over the stone is more logical and much less destructive of renal tissue.

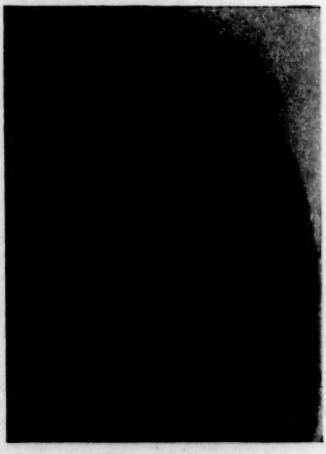
As far as fistula is concerned, I have little experience with it, thank goodness, but I feel that the two factors that promote fistula after operation are in all probability either considerable infection or a remaining obstruction to the urinary passages below the site of the operation.

Having finished the operation so far as possible and removed all stones that are evident, it is very important to have an X-ray film, as Dr. Barney does, of that kidney. He rather suggests taking the picture before the patient leaves the hospital. I prefer to take it before the patient leaves the table. One then finds out that one has or has not accomplished what one set out to do; and if the film is made before the operation is finished, one may once in a while pick up a stone that was not discovered earlier.

During operation we have found the use of a "sucker" of great help. This is a glass tube attached by rubber tubing to a negative pressure pump. Actual suction is applied to all suspected areas within the kidney which have been previously washed out with saline solution. The use of a sucker has been successful in removing urinary sand and other material hard to deliver otherwise. Furthermore, I personally hate very much to use forceps to deliver stones because of the danger of scratching off crystals from the surface of the stone which may be left behind.

As has been emphasized, the postoperative treatment of these cases is tremendously important. If we tell the patient that the removal of the stone has been only part of the process of getting well; that he is suffering from a condition which causes substances to be deposited as stones in the urinary passages; that this condition is one which, even if it may not be cured, at least can be markedly helped by frequent medical observation, the average patient approached from this point of view will be cooperative. At least he will be more co-operative than if allowed to assume that the operation will be the end of the trouble and that henceforth he will be entirely well. Therefore, I think we ought to consider it a duty to the patient to tell him that the stones are removed, but that after he leaves the hospital he must still consider himself a patient until he is discharged.

X-ray film taken at operation.



X-ray film taken at operation.

FIG. 1. Sketch of transverse subcostal incision.

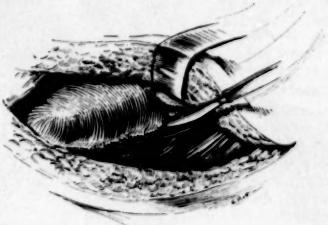


FIG. 2. Dissection of intercostal nerve away from its position underneath the rib.

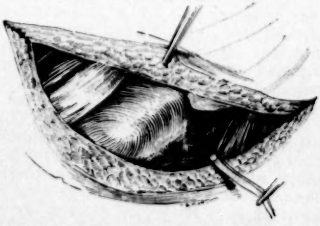


FIG. 3. Intercostal nerve freed and held downward out of field of operation by tape.

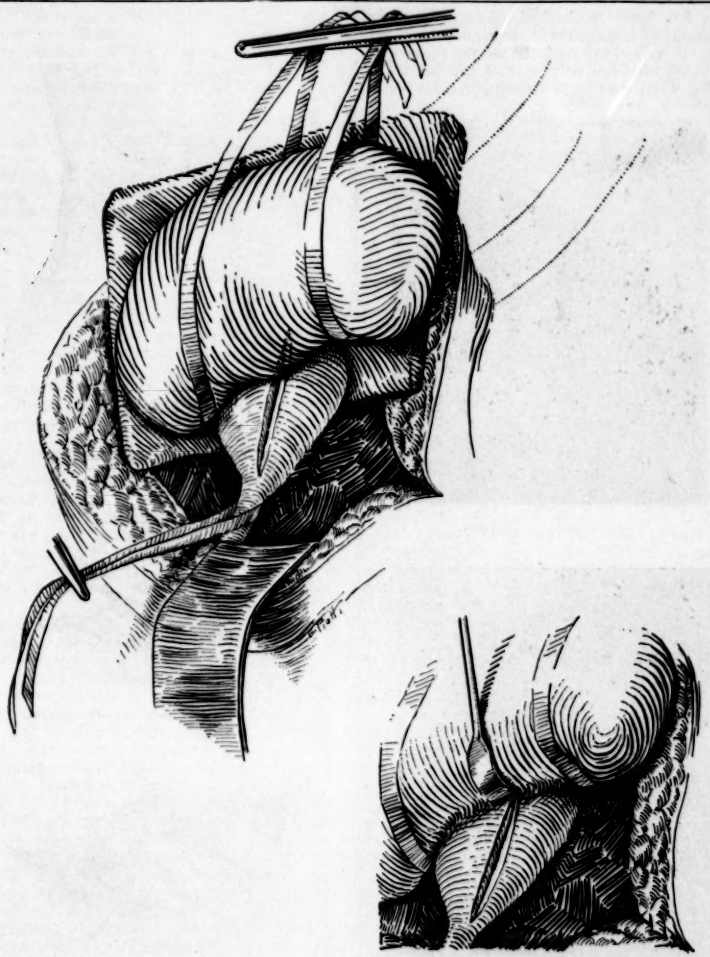


FIG. 4. Kidney fully mobilized. Flexible X-ray film held against it preparatory to exposure. Inset figure shows how access to a higher point on the pelvis may be had by a retractor the tip of which is placed in the renal sinus.

In the postoperative clinic the patient can then be followed along and the kidney can be treated by antiseptics. Thus recurrence of the stone may be avoided.

Summing up, my feeling is this, and I know you will agree with me: The surgeon who first sees the patient with urinary stone has a heavy responsibility. Secondary operations and so forth are followed by exceedingly bad results. The man who does the first operation is responsible for the conduct of the case. He is responsible to the patient in the first place for getting rid of all the stones, and in the second place, as far as possible, getting rid of all the infection after operation. If he realizes that responsibility, my feeling is that there will be many less recurrences and many less secondary operations.

I have three or four slides, which, if I can

ask your tolerance a moment, I should like to show in regard to one of the methods that has appealed to me of getting at the kidney which Dr. Barney quite rightly says is not always easily deliverable.

The feeling is that it is hard to get the kidney up far enough for direct X-ray examination. In order to get good delivery of such a kidney I am perfectly sure, at least in my hands, that the transverse incision is a whole lot better than the incision that runs parallel with the length of the ureter, for the reason that the anterior portion of such an incision is more nearly over the vascular pedicle of the kidney and gives an opportunity to swing the whole organ toward the center and upward. If one takes time and is persistent, it is a rare kidney that you cannot get up far enough to get a film behind it. The transverse incision; the X-ray film; the negative pressure tube; and the after care of the patient are the newer methods which I would strongly urge on all of you as aids in the solution of the problems presented by the stone bearing kidney.

DR. HALBERT G. STETSON, Greenfield, Mass.: Dr. Chute asked me to discuss these papers as a group from the standpoint of the general surgeon. I do not think the general surgeon has anything to discuss about these papers. It is for him to express pretty general commendation to the writers of the papers who, it seems to me, have made the subject unusually clear. Certainly as I have read over these papers, there are a number of things which have been brought out very definitely, very positively, which seemed to me to clear the atmosphere as to what should and what should not be done or advised with a patient who has one or more stones in one or both kidneys.

I think from the standpoint of the general surgeon that many times there has been a question as to whether this small stone should or should not be removed, with the feeling that it was easier at least not to remove it than to remove it, particularly when this patient had no symptoms that really made him particularly uncomfortable or seemed to give him any evidence of damage going on in his kidney.

All the writers have pointed out that while it is probably not a dangerous thing, but an undesirable thing to have a stone remain in the kidney, ultimately it is bound to do some damage to the kidney, and this has been pointed out so plainly that, to me at least, it has brought home the fact that a patient with a stone in the kidney must receive the very best advice from the man whom he first consults.

There is one thing that has not been brought out and that is as to what may be the cause of pain that has all the "earmarks" of a renal stone and yet no stone appears in the radiograph. That perhaps does not come under this subject of stone in the kidney. I remember, however, one patient who came to me some four years ago with bleeding and discomfort in his loin that was more or less complicated with occasional exacerbations and definite blood in his urine. A diagnosis of stone was made and he was referred to a radiographer, a very good one, who brought back a report of no stones being present, and it was felt that the question of stone could be disregarded.

About that time his discomforts disappeared, at least became much minimized, his bleeding ceased, and he had only occasional traces of blood in his urine which he never thought of sufficient importance to say anything about for three years, but would go for periods of six to twelve months without any bleeding at all.

Last fall he came to me again with a recurrence of bleeding and then it was found that he had more than a stone, that his trouble was due to a cancer and apparently an adenocarcinoma of the kidney and as a result of it he ultimately died.

I have had one instance in which in removing a large stone, a part of the stone was left behind, without knowledge, and the patient was discharged and later came back with a recurrence of symptoms and we found on further X-ray that there was still a stone or section of stone present in the kidney. That would bear out the value of Dr. Barney's statement that all these patients should be X-rayed before they leave the care of the operating surgeon.

I was very glad to hear Dr. Quinby make the statement that the patient should be observed for a long time after the removal of his stone, that the removal of the stone was incidental, that there was something which the patient could do and should be instructed in doing, to prevent the recurrence of these stones and he should remain under observation for a sufficiently long period to insure this.

It has seemed to me that stones in the kidney were much like gallstones, that the removal of them was incidental, that the real problem consisted in endeavoring to guide that patient to a life that would prevent their recurrence. As has been said this afternoon, that is often a very difficult thing to do.

Speaking from the standpoint of the man in the country, I do regret that there are not more of the younger men who would be willing to look upon cystoscopy as one of the means of getting sufficient butter to put on their bread, because with us it is a very difficult matter to get cystoscopy done. We have to send these patients to Boston, or to Springfield, which means, with me at least, a travel of from thirty-five to one hundred miles, sometimes an impossible thing to do. So far I have been very unsuccessful in getting the younger men to think that there really was something of value to them and to patients through a cultivation of the art of doing satisfactory cystoscopy. (Applause.)

DR. T. N. HEPBURN, Hartford, Conn.: *Gentlemen*—I appreciate very much the courtesy of being called on, although I have not been working my brain hard enough as I sat comfortably enjoying myself, to give you any specially valuable critical discussion of these papers.

From the diagnostic point of view, I feel that a double catheterization, stereoscopic X-ray and bilateralureteropyelograms are the means to avoid making errors in diagnosis. I fully realize that many of my hearers do not believe in double ureteropyelograms. We have been doing them for many years and I see no reason to change that program.

In regard to operative procedure, I agree with Dr. Deming's statistics that a large portion of small stones will pass, without operative procedure. I doubt very much whether many stones are actually made to pass by manipulation. I realize that that is rather a heretical thing to say, but I am inclined to think they pass coincident with manipulation. The stone in the lower end of the ureter, which seems to be the easiest to manipulate, is frequently the most difficult, and the passage of instruments in an effort to make those stones pass is, to my mind, not at all a non-dangerous procedure, and seriously I question whether it is less dangerous than a clean-cut open surgical removal.

The question of X-ray of multiple stones of the kidney is, to my mind, the most interesting thing that has been brought out this afternoon. With stereoscopic X-rays I feel that before any operative procedure is done the number of stones can be established.

If one kidney is good and the other kidney is such a kidney as Dr. Quinby showed, where he had removed multiple stones through multiple incisions and finally found a last stone, I am inclined to think it would be as good, if not better, surgery, to remove that kidney rather than subject the patient to the rather prolonged procedure of finding the single remaining stone. Unless the cause of the kidney obstruction is found and removed, it will form new stones. I know this may sound contrary to conservative surgery, but kidneys will certainly reform stones unless the cause of the stone formation is found and corrected.

I am not familiar enough with colloid chemistry to explain why stones are formed in a certain percentage of cases. In the kidneys where stones are formed as a result of congenital malformation or acquired obstructive processes, they will certainly reform, unless these etiological factors are corrected or improved. I think where any renal stone case is discharged from the hospital without a clean-cut discussion as to whether any cause for stones has been found, there is an incomplete history of the case.

I fully appreciate the splendid report which Dr. Barney has made in regard to the number of stones which he has found in the kidneys which have been operated on, and I think he is certainly right that for scientific purposes those kidneys should all be X-rayed before leaving the hospital. How much that is going to encourage the patient I do not know. I feel that the patient should have a general discussion of stone formation before his operation and should be made aware of the fact that the removal of the stone is simply a symptomatic procedure and that unless the cause for the stone formation can be discovered at the operation, and corrected, he will be likely to have new stone formation.

PRESIDENT TRUESDALE: You have heard a very enlightening and edifying exposition of this subject and the time is getting on. If you desire, we will throw the discussion open. If not, we will pass it along to the authors of the papers to close the discussion.

DR. CHUTE: I want to thank the gentlemen who have taken part in the discussion, which has been very edifying to me, and Dr. Cunningham has said so little in criticism that I have nothing to say in rebuttal.

DR. O'NEIL: I add my thanks for the discussion to the gentlemen who took part.

DR. BARNEY: And I also add my thanks, but nothing else.

## DUODENAL FISTULA*

BY THACHER W. WORTHEN, M.D.†

THE statement that external duodenal fistula presents no diagnostic problem can be made ordinarily without exception and it is only the exceptional difficulties which may make the report of the following case justifiable.

Aside from the fact that J. M., 38 years of age, a slate roofer by trade, was brought into the hospital in a comatose condition due to repeated doses of morphine and eleven hours after the perforation of a duodenal ulcer his history and operative experience were of no particular interest until the development of an empyema on the right side for which a rib resection was done on the thirty-ninth post operative day.

The subsequent seven months were fraught with a complication of procedures the details of which need not be described. The salient features included two chest operations for resection of ribs and the establishing of through and through drainage from chest to abdomen for a subphrenic abscess and the empyema, one of these operations being followed by pneumonia. A lung abscess, a bronchial fistula and various transfusions helped to afford variety in an already rather colorful picture.

*Read at the Annual Meeting of the New England Surgical Society, Providence, R. I., September 28, 1929.

†For record and address of author see "This Week's Issue," page 87.

The first anniversary of his acute perforation found him in good general condition, however, with an increase in weight of 15 pounds. Profusely draining sinuses nevertheless persisted both at the site of the abdominal and chest operations, the character of the discharge being thick greenish pus causing no skin irritation.

The patient was readmitted to the hospital at this time and the sinus was injected with lipiodol. The stump of this fistula was inverted with a purse string suture.

During the following 3 months the drainage slowly diminished and finally ceased.

A ventral hernia had previously developed due to the infection in the original wound and 4 months ago, which was a year and a half after the operation just described, this hernia was repaired. The duodenum was buried in adhesions but there was no

1—Abdominal sinus tract.
2—Thoracic sinus tract.
3—Duodenal fistula leading to abdomino-thoracic fistula.
4—Subphrenic abscess cavity.
5—Lipiodol within small intestines.

resulting picture clarified the problem by demonstrating a duodenal fistula in the formation of the stem of a Y, the two arms being represented by the abdominal and pulmonary fistulae.

The incompatible aspect of this finding was the entirely normal appearance of the skin around the sinus openings, the only answer to which seemed to be that the quantity of the duodenal discharge was simply enough to prevent the through and through sinus from closing.

It seemed that this restricted quantity might well be explained by a sinus tract which ran obliquely through the duodenal wall, resulting in a mechanism similar to that which takes place after a ureteral transplantation into the sigmoid.

On this theory as a basis a laparotomy was performed avoiding the abdominal sinus opening and in due course we were fortunate enough to find the track leading into the duodenum; it was just large enough to admit the ordinary small probe. The evidence of induration and he had had no ulcer symptoms.

At the present time his weight is normal and he is in robust health.

## CONCLUSION

1—Empyema associated with subphrenic abscess, the former depending undoubtedly directly upon the latter for its origin is by no means an unusual picture.

2—An external duodenal fistula found to be the underlying cause in the persistence of an abdomino-thoracic fistula and yet with a discharge insufficient to excoriate the skin presented a problem the successful solution of which was directly dependent on the injection of lipiodol.

# PAPYRACEOUS TWINS IN QUADRUPLE PREGNANCY

BY JOSEPH TARTAKOFF, M.D.*

THE following case, one of quadruple pregnancy with twin papyraceous foetuses, is deemed worthy of reporting inasmuch as search of the literature reveals no comparable case.

The patient was 28 years old, of Scotch birth, illegitimately pregnant, and admitted to the State Infirmary of Rhode Island on June 29, 1928 for delivery. Her past medical history was essentially negative. Her obstetric history reveals a first pregnancy in 1925, ending in an abortion at three months, and a second pregnancy in 1927, coming to normal spontaneous termination. Laboratory findings, including serology, were entirely negative. Physical

examination yielded positive findings referable to the pregnancy only. The abdominal enlargement was asymmetrical but consistent with the estimated period of gestation; foetal position L.O.A. with heart sounds normal in R.L.Q.; no suggestion of multiple pregnancy; pelvic measurements normal. At no time during the pregnancy, either before or after hospital entry, were there any signs of symptoms of toxaemia or other complication.

On July 3, the membranes ruptured while the patient was up about the ward, and four days later—six weeks before the estimated date of confinement—labor began. The combined factors of slow progress, failure of the patient to co-öperate, and prolapse of the cord led to the mid-forceps delivery of a puny 4½ pound male infant, which survived. Following the delivery the fundus was palpated at the costal arch, and foetal outlines readily identified; a second bag of membranes ruptured, and succeeding pains expelled a placental mass followed immediately by a normal sized male infant in asphyxia pallida. Attempts to induce respiration by the time honored methods were unsuccessful. Subsequent necropsy revealed completely atelectatic lungs, but no other gross pathology.

The mass which preceded the delivery of the second child consisted of two mature placentae with the remnants of their respective membranes, and between and adherent to them a third degenerated placenta, to which were attached the two foetuses. The first placenta presents its maternal aspects in the illustration, and its well preserved cord is evident in the lower right quadrant. The latter is centrally implanted and the placenta as a whole is circular in form. The second placenta, oval in form and measuring 16 by 13 cm., presents its foetal aspect, and its eccentric cord, dried due to faulty preservation. Grossly, both placentae show small fibrous infarcted areas; the microscopic picture is normal. The third placenta is contiguous to the first but separated by a short bridge of tissue. It appears to be continuous with the second placenta, but division is readily effected, and the dense fibrous line of separation is well defined on microscopic examination. This third placenta, roughly circular in outline and measuring 9 cm. across, is firm and fibrous, and on microscopic study presents a preponderance of fibrous tissue with multiple poorly staining necrotic areas and some cellular infiltration. This placenta underlies the foetuses in the illustration.

The larger of the two foetuses is compressed antero-posteriorly with its face turned to the side. The body outline and facial configuration are distinct; the upper extremities are free, the lower extremities doubled onto the abdomen but their form well preserved. The crown-rump height is 8½ cm.

The smaller foetus is compressed obliquely but its outline and body markings equally clear. The left fore-arm is firmly adherent to the degenerated placenta; the right arm is free, as are both the lower extremities. The crown-rump height in this case is 6.7 cm. The two cords are separate to within three cm. of their point of attachment, which is roughly central. The two foetuses were enclosed within a single set of membranes and bathed in a small amount of free fluid.

We have, then, a case of premature but viable di-chorial twins of the same sex but absolutely different characteristics and coexistent monochorial papyraceous twins. Their age, as estimated by body height, is 3½ and 3 months respectively. Radiologic study of the ossification centers places the minimum ages at 3 and 2½ months respectively.

Reports of a single foetus papyraceous delivered with a term or near-term foetus are not uncommon. Such are the cases of Mills[1] and Hewat[2].

Lambert[3] reviews the German literature and presents 28 cases of foetus papyraceous, including one in which the anomaly accompanied a premature infant and a foetus acardiacus[4] and another in which unioval papyraceous twins accompanied a premature child[5]. Wolff[6] presents a similar case.

Lambinon[7] cites a case of triple pregnancy presenting at term a normal male infant, with twin papyraceous foetuses attached to a single placenta.

Klimek[8] was able to find but fourteen cases of the foetuses in triple gestation and added one case of his own observation—unioval twins dying at about five months, and delivered at term with a living child.

No report was encountered of a quadruple pregnancy in which this anomaly of gestation had been demonstrated.

I wish to express my appreciation to Drs. Mallory and Gay of the Department of Pathology at the Boston City Hospital for their invaluable assistance, and to the X-ray service at the hospital for their aid in securing radiographic plates of the specimen.

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Case Records
of the
Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R. C. CABOT, M.D.
F. M. PAINTER, A.B., ASSISTANT EDITOR

## CASE 16021

## FIVE MONTHS' EDEMA OF THE ANKLES

### MEDICAL DEPARTMENT

*First admission.* An unmarried woman thirty-three years old of Canadian parentage entered June 29 complaining of swelling of the ankles, especially in the evening, of five months' duration.

Eight months before admission she had "influenza"—headache and aching of the joints, bones and back, with sore throat and a feverish feeling. She felt quite ill for a week, but continued to work hard and went out a good deal at night. She felt very tired afterward. In December she felt well. In January she had severe pain over the left antrum with slight swelling. In February she found her ankles were swollen. After six days in a hospital her condition improved. For the next two months she was on a diet. Several weeks before admission she had a second attack similar to the first. She stayed in bed, and for a few weeks felt well. June 16 and 17 she had nausea, vomiting, diarrhea and abdominal cramps. For the past two nights she had passed a small amount of urine twice each night. Her usual urinary output was three pints in twenty-four hours. For the past two months she had not slept well. She had taken aspirin frequently for pain over the antrum. She had lost no weight. Her upper eyelids were puffy in the mornings. She had hemorrhoids. A week before admission a physician of this hospital found the non-protein nitrogen 24, the blood chlorides 632.

Her mother died of cardiorenal disease, one sister of brain tumor, another of tuberculosis. A living sister also had tuberculosis. The patient had measles at three. She had had possible typhoid fever and rheumatism. Every winter she had several attacks of tonsillitis. Eight years before admission she had influenza. Two years before admission she had an operation for double antrum done at the Eye and Ear Infirmary. She had a headache every week, leaving her head sore. She was rather nervous and thought she did not remember so well as she used to.

Clinical examination showed a well nourished woman. Upper teeth false, many carious lower teeth. Some pyorrhea. Tenderness over both antra, especially the left. Lungs normal. Apex impulse of the heart not seen or felt. Left border of dullness 8 centimeters from midsternum, 1 centimeter outside the midclavicular line. Right border of dullness 3.5 centimeters, supracardiac dullness 6. Sounds and action normal. No murmurs. Aortic second sound greater than pulmonic second. Blood pressure 148/110 to 135/95. Pulses and arteries normal. Abdomen pendulous, soft. Marital introitus. Fundus in third degree retroversion. Small external hemorrhoidal tab. The examination was otherwise negative.

Urine: 33 to 72 ounces, specific gravity 1.002 to 1.124, at a two-hour test 1.002 to 1.010, a very large trace to the slightest possible trace of albumin at all of seventeen examinations. The sediment was full of granular casts and bacteria at one examination, occasional hyalin casts at the other, 4 to 8 leukocytes at both, 1 to 2 red cells. Blood: 10,500 to 8,000 leukocytes, 80 per cent polynuclears, 4,500,000 to 4,900,000 reds, hemoglobin 75 to 85 per cent, platelets diminished, smear otherwise normal.

Chart normal.

X-ray examination showed the heart measurements apparently within normal limits. The frontal sinuses were rather rudimentary. There was thickened membrane of each antrum, especially of the right. One tooth showed periapical absorption. There was a remaining root fragment of a molar. The kidney shadows were not remarkable in size or position. Just below the right lateral border of the sacrum were two shadows of increased density, probably bowel shadows. Just lateral to the transverse processes of the 4th and 5th lumbar vertebrae was an indefinite shadow of increased density which it was thought might represent a calculus, although its appearance suggested an artefact. A second examination two weeks later showed this same shadow. It was not in the usual position, but was somewhat lateral to the usual position of the ureter.

In the ward the patient was comfortable and had no edema. July 9 she was up and about. Two days later there was very slight pitting edema over the ankles which subsided after thyroid extract therapy and return to bed. July 18 five teeth were extracted. A week later she still had slight pitting edema over the lower legs after being up for a few hours. She had also some pain in the left antrum in bad weather. A throat consultant advised no treatment. July 24 she was discharged slightly relieved.

*History of interval.* After leaving the hospital she was constantly under medical care. She rested in the country for several months and felt very well, although some edema of the ankles persisted. She then worked very hard, keeping fairly well to her diet, and felt very well until November, a year and four months after her discharge. Then her ankles and face became much swollen and she had a dragging sensation all over. She spent a week in a hospital with some improvement. After two weeks of rest at

home she began to work again, though she did not feel strong. In December she noticed that her abdomen was swelling. After two weeks she spent three weeks in the hospital, again with improvement. While there she developed a skin lesion at one time thought to be erysipelas,—red, swollen, painful lesions, not symmetrical, recurring in different regions. After a week at home the swelling of her abdomen increased, causing dyspnea, nausea and occasional vomiting. She again returned to the hospital. During her stay this time she was fairly ill, with shaking, sweating, unproductive cough, at times violent, and fever lasting two weeks. She thought a diagnosis of pneumonia was made. Five days before her second admission she was sent in from her hospital to the Eye and Ear Infirmary on account of recurring left supraorbital pain. It was thought at the Infirmary that she probably had "a little something" in her sinuses. She was transferred to the Massachusetts General Hospital for treatment of the general condition.

She had had hemorrhoids for years, and had at times noticed a little blood.

*Second admission*, March 30, twenty months after her first admission.

Clinical examination showed a pale, very edematous looking woman. Tonsils missing. Left antral region tender. Moist râles throughout both lungs. Apex impulse of the heart not seen or felt. Left border of dullness 12 centimeters from midsternum, 4.5 centimeters outside the midclavicular line. Right border one centimeter to the right. Supracardiac dullness 4 centimeters. Sounds normal. Rhythm rapid. No murmurs. Pulses and arteries normal. Blood pressure 190/120 to 90/70. Abdomen showed uniform soft distention. Generalized edema. Immense edema of vulva. Marked edema of the sacrum and legs. Obliteration of optic cup.

Urine: 68 to 47 ounces, specific gravity 1.020 to 1.025, a large trace of albumin at all of four examinations, sugar at all of three, acetone and diacetic acid once, 6 to many leukocytes at all of four sediment examinations, hyalin casts at three, the last specimen loaded with hyalin and granular casts. Blood: hemoglobin 70 per cent., reds 2,800,000 to 3,960,000, slight anisocytosis once, two smears otherwise normal, leukocytes 8,700 to 10,000, polynuclears 62 to 70 per cent. Hinton negative. Non-protein nitrogen 23 to 44 milligrams. Total protein 3.162 per cent to 4.3 per cent. Blood cholesterol 667 milligrams. Basal metabolic rate—3, pulse 99, weight 73.5 kilograms. Blood sugar 34 milligrams.

Temperature 97.1° to 99.3°, pulse 83 to 103, respirations 20, with a terminal rise to 105.3°, 170 and 31.

April 2 the heart could not be percussed. The sounds were of good quality. There was a systolic murmur at the base. A few crepitant râles were heard at the lung bases. There was massive edema of the abdominal wall and possible ascites. April 4 the total protein of the blood was half the normal. Early that morning the patient had a chill with a temperature of 104.2°. There was slight tenderness in both lower quadrants; no spasm.* The right lung base showed rather coarse crepitant râles. She sank rapidly into coma. The blood pressure dropped. April 5 the albumin-globulin ratio in the blood was reversed—albumin 2.1 per cent, globulin 2.2 per cent. That morning she died.

## Clinical Discussion

BY RICHARD C. CABOT, M.D., AND WILLIAM R. JORDAN, M.D.

### NOTES ON THE HISTORY

Of course what we want to know in cases with tuberculosis in the family is whether the patient was exposed, not merely whether some member of the family whom the patient had never seen had tuberculosis.

We have the history here of a number of infections of the upper respiratory tract including the antrum, several attacks of swelling of the feet and one time at least when the eyelids were swollen. So that the things in our minds are nephritis and heart disease. I do not think the presence of nocturia for a couple of nights is in itself of any importance.

### NOTES ON THE PHYSICAL EXAMINATION

The diastolic blood pressure is particularly important.

I suppose stone in the ureter is the thing they are trying to exclude in the X-ray examination. I do not see any symptoms in the case to suggest stone in the ureter. I think the history should be taken into account. We have so far no account of the blood chemistry or of a functional test of the kidney. I should suppose from the general statements made here that they believe it to be a case of glomerulonephritis.

The teeth were extracted on general principles I should say.

I suppose she was discharged the first time with a diagnosis of glomerular nephritis. In quite a number of cases of glomerular nephritis we get no more demonstrable case of enlargement of the heart than we have. She seemed to have hypertension, though we have only two measurements. I see nothing wrong with the heart to account for the edema, and we have a good deal of evidence against the kidney. I suppose chronic nephritis was the diagnosis made.

Dr. William R. Jordan: The diagnoses were nephrosis and abscessed teeth.

I believe you said the renal function was missing. It was 50 per cent.

Dr. Cabot: That is an extremely good function, and hard to reconcile with the diagnosis of nephritis. A diagnosis of nephrosis or tubular nephritis versus glomerular is a very difficult one to make, especially in an adult. The absence

*Note by Dr. William R. Jordan, senior interne on the West Medical Service. The morning of death the patient was moaning and rolling in bed, complaining moderately of abdominal pain and slight tenderness. A surgical consultant was asked to see her. He saw no reason for surgical intervention.

of cardiac enlargement or blood pressure increase is one of the data on which the diagnosis of nephrosis is founded. I do not see how they could in any way be certain whether it was nephritis or nephrosis, or exclude nephritis. Of course that high renal function is very queer for nephritis.

DR. JORDAN: There were two other items of blood chemistry, cholesterol 655 milligrams, total protein 6,473.

DR. CABOT: The cholesterol then was very markedly increased. That of course has been pointed out a number of times as occurring especially in nephrosis.

DR. JORDAN: The basal metabolic rate was +1.

DR. CABOT: The points favoring nephrosis are high cholesterol and high renal function and to a certain extent absence of cardiac hypertrophy.

The skin lesions she developed in the hospital before her second admission do not sound like erysipelas to me.

None of the things that I have been thinking of ought to cause fever or coughing. It seems to me as if she must have had some other lesion at that time.

I take it that that last blood pressure was taken near death, after the heart had begun to fail.

I do not know about these albumin-globulin reactions in relation to the diagnosis of nephrosis versus nephritis.

DR. TRACY B. MALLORY: It is supposed to be characteristic of nephrosis that the ratio is reversed.

DR. CABOT: Dr. Mallory says this should be characteristic of nephrosis. I have not seen enough adult nephrosis cases to know whether anemia is characteristic in nephrosis as in nephritis. She certainly has definitely raised blood pressure now.

I do not see any reason to go outside the kidney in our diagnosis, and I do not know enough to have an intelligent opinion of my own on the question of nephrosis versus nephritis, that is tubular versus glomerular or vascular nephritis. Dr. Jordan, are there any other points that this record does not bring out?

DR. JORDAN: A blood culture the day before death showed pneumococcus type IV. We attempted to give her serum, but she died before it could be given.

DR. CABOT: You remember also this note of Dr. Jordan's that she complained of abdominal pain and tenderness, which of course might have connected itself with pneumonia or with some other lesion which we have not enough evidence to identify. So we have to say that she had some form of kidney trouble, there being perhaps enough evidence to identify nephrosis, and a terminal infection which we may very easily guess to be pneumonia.

CLINICAL DIAGNOSES (FROM HOSPITAL RECORD)

Nephrosis.
Pneumonia.

DR. RICHARD C. CABOT'S DIAGNOSES

Kidney disease, perhaps to be identified as nephrosis.
Terminal pneumonia.

ANATOMIC DIAGNOSES

1. *Primary disease.*

Chronic glomerular nephritis with superimposed nephrosis.

2. *Secondary or terminal lesions.*

Bronchopneumonia.
Acute pleuritis.
Ascites.

## PATHOLOGIC DISCUSSION

BY TRACY B. MALLORY, M.D.

We were limited at autopsy to a small abdominal incision, to palpation of the organs and to removal of small pieces for microscopic examination from those we found diseased.

The kidneys were the most interesting thing. They were definitely enlarged, weighing 365 grams. When the capsule was stripped back it left a practically smooth surface. On cutting into the organ it showed a markedly pale surface of very bright lemon-yellow tinge, which made it obvious even in gross that there were large amounts of lipoid in the parenchymal tissue. Microscopic examination showed a very extensive fatty degeneration of the tubules, which is one of the characteristics of nephrosis. But it also showed a quite definite degree of glomerular involvement, rather more than is consistent with pure lipoid nephrosis. I think one would have to group the case under both nephrosis and nephritis. A certain definite proportion of cases of nephritis seem to start as nephritis, seem to progress thereafter entirely or chiefly as nephrosis. They show little or no increase in the symptoms more or less directly referable to glomerular involvement. The blood pressure does not go up, nitrogen retention is not marked. On the other hand the edema and the blood chemical changes, that is, high cholesterol and diminished proteins, suggest that the tubular lesion from that time on is the more active and important element. This interpretation of the process receives confirmatory support so far as this case is concerned from the manner of death, because a very striking number of cases of nephrosis die of pneumococcus infection. For some peculiar reason peritonitis is rather more frequent than pneumonia, usually a primary pneumococcus peritonitis.

There was a bronchopneumonia here; at least consolidated nodules could be felt on the bases of the lungs. Everywhere we found evidence

of edema. There was fluid in both pleural cavities. The heart did not feel enlarged. The other organs were essentially negative.

DR. CABOT: There was no peritonitis?

DR. MALLORY: No, it was a clear serous effusion.

DR. CABOT: The heart did not seem enlarged?

DR. MALLORY: No.

A STUDENT: Does it ever work the other way? Does nephrosis ever end up as nephritis?

DR. MALLORY: In the last stages of nephrosis we get a good deal of glomerular involvement, though you do not get much evidence of it in the symptomatology.

A STUDENT: What is the etiology of these things?

DR. MALLORY: I do not think anyone has the faintest idea. Certainly chronic infection in the sinuses is a very common finding, especially in childhood. Syphilis was at one time held responsible. One of our cases in the hospital here developed nephrosis very shortly after or during the secondary stage of syphilis with no other etiology present at all. But that is not the rule. Lipoid nephrosis is considered by some a general metabolic disorder and the renal involvement looked upon as secondary.

DR. CABOT: Is mercurial poisoning of the kidney essentially different from nephrosis?

DR. MALLORY: It is generally classed as a form of nephrosis, but its histologic features—the extensive coagulation necrosis and the tendency to calcification—make it readily distinguishable.

DR. CABOT: I do not know whether it makes any particular difference to the patient what we call this. If we went wrong and called this nephritis when nephrosis was the trouble, would the patient be worse off?

DR. MALLORY: It makes a difference in treatment. The treatment of the two diseases is reversed. Patients with nephrosis do better on a high protein diet than a low one. Some of them seem to improve on thyroid therapy. Unless you keep the protein high the edema increases. Edema in this disease is supposed to be due to diminished plasma. So far as I know people never die of nephrosis, but the liability to infection, particularly pneumococcus infection, is so great that the prognosis is not good.

DR. CABOT: Do you know about anemia in nephrosis?

DR. MALLORY: It is not characteristic, in fact it does not seem to have been present in any reported cases unless there were other complicating factors.

This patient had a higher blood pressure all through than is typical of nephrosis.

DR. JORDAN: She was put on Epstein's nephrosis diet, a high protein diet. She got along well for some time in spite of working very hard.

DR. CABOT: I am glad I did not labor very hard in trying to distinguish nephritis from nephrosis, since she had both.

## CASE 16022

## A CASE ILLUSTRATING THE COURSE AND TREATMENT OF ESSENTIAL HYPERTENSION, WITH A NOTE ON THE RELATION OF VERTIGO IN HYPERTENSION AND OF CEREBRAL ACCIDENTS TO THE WEATHER

### CARDIOLOGICAL CLINIC OF THE MEDICAL DEPARTMENT

A single Italian upholsterer forty-five years of age was first seen in the Out-Patient Department in 1920 complaining of headache and fatigue.

The family history was negative.

His habits were not remarkable. He did not smoke. He drank three cups of coffee and two or three glasses of wine daily.

The past history was negative. The patient denied ever having been sick. There were no symptoms referable to the cardiorespiratory system.

The gastro-intestinal system was negative with respect to the past history. But with the headaches which he had had for some time intermittently and for one year almost steadily he frequently felt nauseated and occasionally vomited. The pain was parietal or over the top of the head. There was no typical hemicrania described. Otherwise during the present illness he complained only of vertigo coming on about once a week.

Physical examination showed evidence of peripheral arterial sclerosis. The heart was moderately enlarged to the left on percussion. The rhythm was regular. The blood pressure was 220 millimeters of mercury systolic and 130 millimeters of mercury diastolic.

The urine was normal in appearance. The specific gravity was 1.027. There was no albumin or sugar. The sediment showed only a rare leukocyte. The blood Wassermann was negative. The non-protein nitrogen was 46 milligrams per 100 cubic centimeters of blood, the creatinin 1.1 milligrams per 100 cubic centimeters of blood.

A month after his first admission without any treatment the blood pressure was 210 systolic and 130 diastolic. He was then given sodium nitrite one grain three times a day after meals and Carlsbad salts one dram before breakfast each day. Meat, fish, eggs and salt were excluded from the diet.

In the fall of 1921 the patient was studied in the wards. Transient albuminuria and occasional hyalin casts in the urinary sediment were found. The blood chemistry and the phenolsulphonephthalein test were essentially normal. No cause of the vertigo or headaches was found by eye and ear examinations. Questioning in the wards revealed scarlet fever in childhood and shock as a possible cause of death in his father. Fluoroscopy of the chest showed slight prominence of the aorta to the left

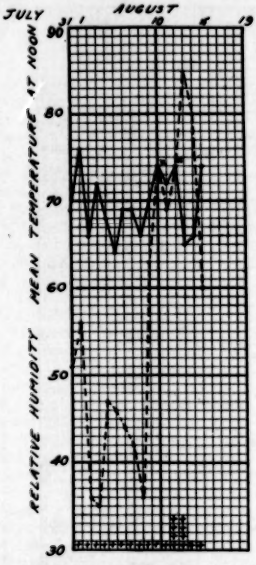


FIGURE I. Attacks of vertigo in the present case shown by plus marks. Severity of attacks indicated by the number of plus marks. (See text for full explanation.)

Mean temperature at noon—heavy line.
Relative humidity at noon—broken line.

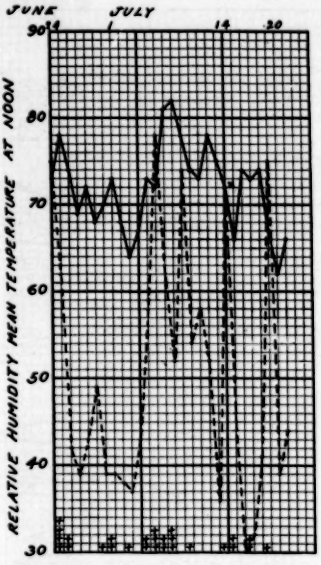


FIGURE II. Attacks of vertigo in another patient. (See Figure I.)

Mean temperature at noon—heavy line.
Relative humidity at noon—broken line.

and prominence of the left cardiac border. The blood pressure was 165 systolic and 110 diastolic at discharge.

Seen one year later, the patient's symptoms were essentially the same. When seen in the spring of 1929, eight years later, his complaints were as before except for dyspnea noticed especially at night. The blood pressure was 200 systolic and 130 diastolic.

He was given potassium iodide and was digitalized. Protein and salt were restricted but not excluded. X-ray showed slight dilatation of the aorta and marked hypertrophy and dilatation of the left ventricle. Several determinations on different days showed the blood pressure to vary from 200 to 215 systolic and from 100 to 120 diastolic. Potassium iodide was omitted and potassium sulphocyanate three grains in one dram of water was given three times a day after meals for a week, twice a day after meals for a week and once a day for a week. After this course successive blood pressure determinations in as many minutes were 190 systolic over 120 diastolic; 190 over 120; 180 over 125; 180 over 125. This drug was continued in the last dosage for two more weeks and the following blood pressures were recorded: 210 over 110; 190 over 115, 190 over 110, 190 over 110. During deep inspiration with the breath held the blood pressure was 170 systolic and after several successive deep breaths was recorded at 180 over 110.

The sulphocyanate was continued for a month, three grains a day being given for the first two weeks. The following blood pressures were found on successive determinations: 230 over 130; 210 over 125; 220 over 135; 208 over 125. Since then, continuing on the drug the pressure has on one occasion been 200 systolic, but otherwise has not been over 180 systolic and has been as low as 172. The diastolic pressure has varied from 130 to 140.

## Discussion

BY ROBERT STERLING PALMER, M.D.

Essential hypertension is often symptomless and in many patients may continue to be so until it is found on routine examination and injudicious statements are made regarding it to the patient.

Whether symptoms arise through knowledge of the condition and fear of the consequences or through organic vascular changes, a very com-

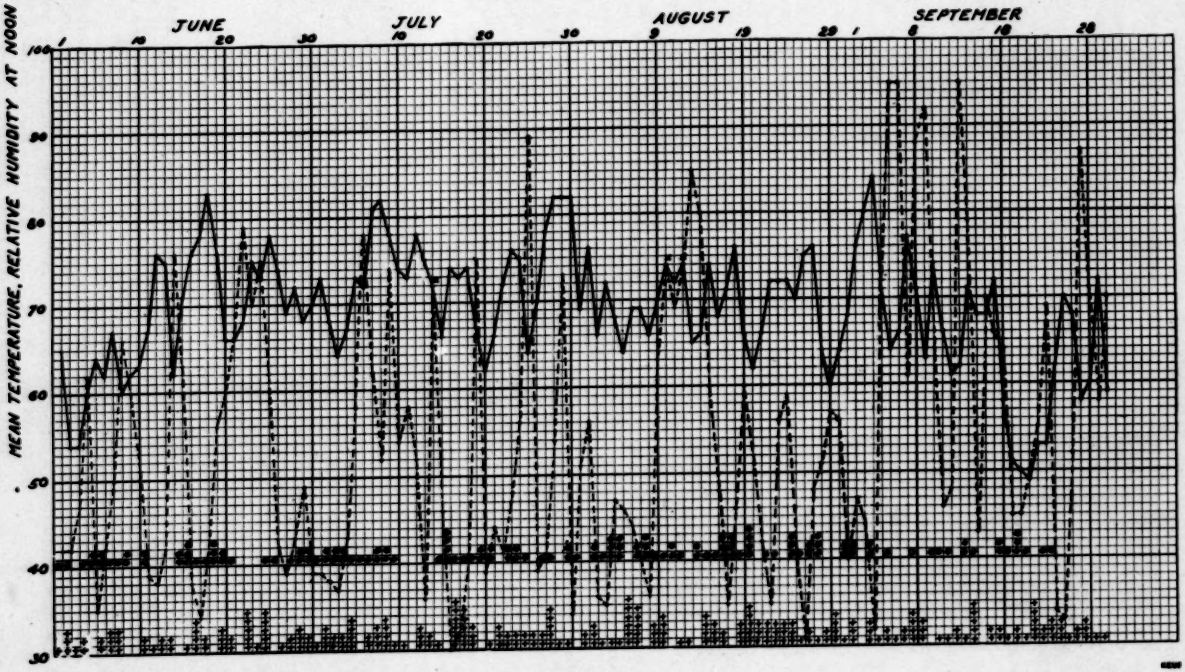


FIGURE III. Deaths from cerebral accidents indicated by plus marks.
Onset of cerebral accidents indicated by circles.
Mean temperature at noon—heavy line.
Relative humidity at noon—broken line.
(See text for full explanation.)

mon manifestation is vertigo. What most of these people are really afraid of is a cerebral accident, and they are suspicious that the vertigo is or may be the onset of such an event.

One is impressed by the frequency and severity of vertigo during hot weather, especially in the humid so-called dog days. The patient reported above seemed to be especially troubled on such days. I asked him to bring me a dated list of the number and severity of his attacks of dizziness. He did this, and I constructed the chart shown in Figure I. The number and severity of the dizzy attacks is indicated by the plus marks, the attacks being graded from one to four plus. (Plus marks are placed in spaces preceding lines indicating the days of the month.) The patient experienced his customary vertigo, chiefly noted on change of position, until the 12th and 13th of the month, when he was dizzy continuously and had to stay in bed. This occurred on the days showing the highest relative humidity, the mean temperature being somewhat lower than on the day or two preceding. Figure II is a similar chart for another patient, a woman who has a rather variable sort of essential hypertension, apparently related to the menopause. Here again the vertigo seems to come with high relative humidity.

It is suggested from these two observations that on days with a high relative humidity, when the body loses heat and moisture with difficulty, the surface capillaries are dilated and the blood pressure is lower than is customary for that individual and that this may be the explanation of the vertigo.

Patients with known hypertension and suffering from vertigo want to know whether this dizziness is the warning of or even the first stage of a cerebral accident. I think this may be answered in part as follows. A number of observers have pointed out the fact that there are more sudden deaths from cerebral hemorrhage, thrombosis and embolism and from heart disease in cold weather than in warm weather.[1, 2, 3] Thus the time when they are having the most vertigo is the time when they have fewer chances of experiencing a shock. Finally I have charted in Figure III the deaths from cerebral accidents (indicated by plus marks) and the onset of cerebral accidents (indicated by circles) as nearly as can be concluded from the death reports filed in the City of Boston, together with the mean temperature and relative humidity for each day during the summer months. The smaller number of occurrences charted is due to incomplete data on the death reports. Furthermore not all the cases occurring during the period studied had died. These are of course important criticisms, especially since the time of the occurrence may be more important than the time of death. However, such evidence as there is fails to show any definite relation between days of high temperature or high relative humidity and the occurrence of or death from cerebral accidents.

DIAGNOSES

Essential hypertension.
Hypertensive heart disease.
Secondary renal changes.

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## EXPANDING PSYCHIATRY

ALL the great clinical masters have been, in a sense, good psychiatrists; they always imbued their patients with a feeling of confidence and an optimistic outlook on life. The Jacksons and the Shattucks, Osler and Allbutt, had this quality to a marked degree; it was from such men, more or less unconsciously, that medical students learned their psychiatry a decade or more ago. It was this quality, also, as Dr. Winternitz quaintly puts it, that "enabled the old-fashioned doctor to carry away the family troubles in his unsanitary black bag."

Changing times in medicine, however, as in other walks of life, demand new viewpoints. The growth of the mental hygiene movement, the broadening of psychiatry as a special branch of medicine, the interest in preventive medicine and its relation to sociology, psychology, child development and legal medicine, have tended to throw a greater burden on the medical school that is intent on "producing doctors for the whole man, not for fractions of a man."

Yale University and its Medical School have met this demand by the development of an Institute of Human Relations. The plan is carefully outlined in Dr. Winternitz' paper in this issue. The scheme is extensive, the scope broad; many departments of the University are involved. Fifty beds, in a new building, will offer a hospital clinic for combined biological and sociological studies; an out-patient department also will be developed.

One can look forward, on the whole, to this splendid endeavor with enthusiasm and optimism. Money, buildings, an ancient seat of learning, public confidence and trained men are assets at hand. We realize that an important event is taking place at New Haven in medical education and psychiatric research which will be watched by the physicians in this country with great interest.

## LET THE NATION DEAL JUSTLY!

A BILL is before Congress to increase the pensions to Mrs. Reed, widow of Major Walter Reed from $125 per month to $250; that of Mrs. Carroll, widow of Major James Carroll from $125 per month to $200; and that of Mrs. Lazear, widow of Dr. Jesse W. Lazear from $125 to $200 per month.

John R. Kissinger, a hospital orderly, gave himself to the study of yellow fever and permitted mosquitoes infected with the disease to bite him. He nearly lost his life, was broken in health and will probably never be able to do much in support of himself and family. Congress appropriated two amounts totalling $112 per month for him, but after a time the pension bureau decreed that he had no right to this pension and demanded the return of $1,699.60. This spurred Congress to pass a specific act which relieved Kissinger from this unjust claim.

It seems strange that the heroism of all who gave so much for the benefit of mankind should have been so inadequately recognized. A pension of the amounts mentioned above to the widows of those who placed humanity under lasting obligation is niggardly, and $112 a month for a man who suffered tortures in the same heroic venture is a reflection on the nation.

Aside from the relief of the scourge of yellow fever the financial benefits following the application of knowledge derived from the studies on voluntary yellow fever victims is beyond computation. Most men would reject offers of millions rather than surrender their bodies to yellow fever infection. We trust that Congress will deal generously with all concerned in this demonstration. The story of that scientific study in 1900 is one of the great epoch-making records of man's conquest over disease.

An interesting comparison of the attitude of our Government in this connection may be made with the pension of 12,000 francs given to Pasteur, 30,000 pounds given to Jenner and various other titles conferred on other eminent

servants of humanity. It will also be pertinent to note that even though Pasteur contributed a great boon to humanity he didn't lose his life in the effort and neither did Jenner. It seems strange that the richest country in the world should pare down its recognition of these contributors to human welfare to a sum barely sufficient to enable dependents to maintain a respectable living.

## THIS WEEK'S ISSUE

CONTAINS articles by the following named authors:

WINTERNITZ, MILTON C. B.A., M.A., M.D. Johns Hopkins University 1907. Fellow in Pathology, Johns Hopkins University, 1907-08; Assistant Instructor and Associate Professor of Pathology, 1907-1917; Assistant Resident Pathologist, Johns Hopkins Hospital, 1910-13; Associate Pathologist, 1913-17; Pathologist, City Hospital, Baltimore, 1910-17; Professor of Pathology and Bacteriology, Yale University School of Medicine, 1917-1925; Dean, 1920-; Anthony N. Brady Professor of Pathology, 1925-; Pathologist, New Haven Hospital and New Haven Dispensary. His subject is: "The Institute of Human Relations at Yale University." Page 57. Address: Yale University School of Medicine, New Haven, Conn.

CHUTE, ARTHUR L. M.D. Harvard 1895. F.A.C.S. Associate Professor, Tufts Medical School; Genito-Urinary Surgeon, St. Elizabeth's Hospital, Brighton; Consulting Urinary Surgeon, Newton Hospital, Newton; Leonard-Morse Hospital, Natick; Somerville Hospital, Somerville. His subject is: "The Diagnosis of Renal Stone." Page 60. Address: 352 Marlborough Street, Boston.

O'NEIL, RICHARD F. M.D. Harvard 1897. F.A.C.S. Associate Urologist, Massachusetts General Hospital; Associate in Urology, Graduate School of Medicine, Harvard University. His subject is: "Treatment of Renal and Ureteral Calculi." Page 63. Address: 374 Marlborough Street, Boston.

BARNEY, J. DELLINGER. A.B., M.D. Harvard 1904. F.A.C.S. Chief of Service, Urological Department, Massachusetts General Hospital; Assistant Professor Genito-Urinary Surgery, Harvard Medical School; Consulting Urologist, Salem Hospital; Waltham Hospital; Cable Hospital, Ipswich; Gale Hospital, Haverhill; U. S. Marine Hospital, Chelsea; Massachusetts Eye and Ear Infirmary; Hunt Memorial Hospital, Danvers; Peterboro Hospital, Peterboro, N. H. Address: 87 Marlborough Street, Boston. Associated with him is:

WATSON, J. LAXTON. M.B. Toronto Medical School 1926. Resident Surgeon, Urological Department, Massachusetts General Hospital. Address: Massachusetts General Hospital, Boston. Their subject is: "Some of the Results of Renal Calculus." Page 67.

WORTHEN, THACHER W. M.D. Dartmouth Medical School, 1911. His subject is: "Duodenal Fistula." Page 76. Address: 179 Allyn Street, Hartford, Connecticut.

TARTAKOFF, JOSEPH. M.D. Tufts College Medical School 1929. His subject is: "Papyraceous Twins in Quadruple Pregnancy." Page 78. Address: 6 Lamartine Place, Jamaica Plain, Mass.

## MISCELLANY

### CYANIDE METAL POLISHES PROHIBITED IN PUBLIC EATING PLACES IN NEW YORK

In order to safeguard the public against cyanide poisoning through the use in public eating places of metal polishes containing cyanide compounds, a danger to which attention was first called by the New York State Department of Health, the following regulation relating to Section 149 of the Sanitary Code was adopted by the Board of Health of the City of New York at a meeting held November 26, 1929.

Regulation 41. The use of poisonous substances for cleansing or polishing kitchen-ware or silver-ware prohibited:—The use of any article, polish or substance containing any cyanide preparation or other poison is prohibited for the cleansing or polishing of copper, nickel, silver, silver plated ware or appliances or utensils in any hotel, club, restaurant or public eating place used for the service or preparation of food or drink therein.—*Bulletin N. Y. City Department of Health.*

### WINTER TERM OF THE TRAINING SCHOOL FOR ATTENDANT NURSES

Among the few schools in Boston to open a winter term is the training school for Attendant Nurses conducted by the Household Nursing Association at 222 Newbury Street, Boston. This term will open on January 22.

A class of 25 women from Boston and vicinity and from many parts of New England are now enrolling at the school to take up their studies. Miss Katherine Shepard, R.N., is Superintendent of the school. During the training the attendant nurses wear blue and white uniforms and large white aprons. Upon graduation they are awarded a diploma, cap, and school pin. Each Attendant Nurse upon completion of her training will have a chance to do attendant nursing under supervision.

This school is made possible by a group of well-known women in Boston and vicinity, together with a few prominent men who contribute toward the support and upkeep of the school. The group of Directors interested in this work include: Mrs. John L. Ames, Mrs. John T. Bottomley, Mrs. George L. Catlin, Mrs. Henry M. Channing, Mrs. Samuel Eliot, Mrs. David J. Evans, Mr. Donald McKay Frost, Mrs. Robert D. Hall, Dr. Robert B. Osgood, Mrs. Roger

Pierce, Mrs. Robert W. Rivers, Mrs. Howard Rogers, Mrs. Charles L. Scudder, Mrs. Philip L. Sylvester, Mrs. Henry D. Tudor, Mrs. Eliot Wadsworth.

## WEEKLY HEALTH INDEX

Telegraphic returns from 65 cities with a total population of thirty million for the week ending Dec. 21, indicate a mortality rate of 13.3 as against a rate of 16.2 for the corresponding week of last year. The highest rate (20.9) appears for San Antonio, Texas, and the lowest (5.8) for Canton, Ohio. The highest infant mortality rate (140) appears for Yonkers, N. Y., and the lowest for Grand Rapids, Mich., which reported no infant mortality.

The annual rate for 65 cities is 13.0 for the fifty-one weeks of 1929, as against a rate of 12.9 for the corresponding weeks of 1928.

## BIRTH AND MORTALITY RATES

Preliminary reports by the Public Health Service tend to show that birth rates in the United States are declining and that the mortality rate is rising as shown by comparison of 1928 with 1927 in the registration area.

In 1927 the birth rate was 20.7 per 1000 and 1928 it fell to 19.7. For deaths the rate in 1927 was 11.4 per 1000 and 12.1 in 1928. The birth rate has been decreasing since 1915.

## PREVENTION OF IMPORTED DISEASES

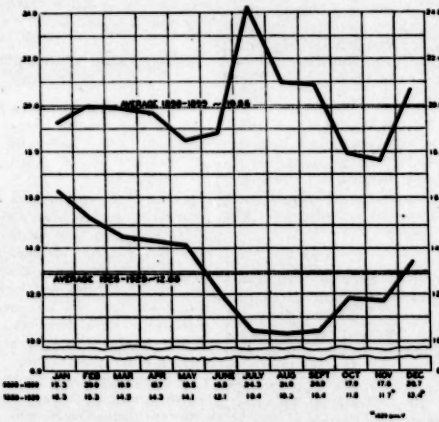
The efficiency shown by American Officers stationed at foreign ports seems to have been demonstrated by the records on file with the Public Health Service. In a report to Congress the Surgeon General gives the information that no instance of the importation of any disease subject to quarantine occurred during the fiscal year 1929.

A few interesting statistics are incorporated in this report as follows: During the past year at domestic ports 19,529 vessels, 933,035 passengers and 1,134,906 seamen were inspected on arrival by quarantine officers. At insular ports 2,937 vessels, 138,947 passengers and 203,182 seamen were inspected, and at foreign ports 5,401 vessels, 544,127 passengers and 366,762 seamen were inspected prior to embarking for the United States.

Of the passengers who embarked at European ports, 43,047 were vaccinated and 92,603 were deloused under the supervision of medical officers of the Service.

## THIRTY YEARS OF PROGRESS

Below is reproduced the course of the death rate, by months, thirty years ago and the course at the present time. The difference between the average height of the two curves, over 7 per thousand of population, is extremely gratifying. Were the death rates of thirty years ago to prevail now, New York City would suffer a loss of over 42,000 lives beyond what it now loses each year!




Special attention is called to the change in the character of the mortality curve. Thirty years ago the largest number of deaths regularly occurred during the hot weather. Those were the days when each summer, "cholera infantum" carried off its victims by the thousands. With the remarkable achievements in the control of infant mortality, especially in summer diarrhoea, the summer months now regularly show the lowest mortality, the highest rates being registered in the first four or five months of the year.—*Bulletin N. Y. City Department of Health.*

## NEW SCHOOL FOR SOCIAL RESEARCH

The New School for Social Research, at 465 West 23rd Street, New York, announces a course of eight lecture and discussion periods on Psycho-Neuroses, to be held on Fridays, from five to seven o'clock, beginning January 24, with admission open to physicians only.

Fritz Wittels, M.D., of Vienna, who has been associated with Freud, since 1904, as a student of problems of psychoanalysis, and who has achieved distinction as an author and practitioner, will conduct this course, it is announced by Dr. Alvin Johnson, Director of the New School.

This course, consisting of eight lectures of two hours each and open only to physicians, presents an unusual opportunity for professional men to discuss the theory and treatment of hysteria as disguised in its various forms, symptoms, and ailments. The discussion will include phobias, compulsion neurosis, psychoses, anti-social behavior such as kleptomania, sex promiscuity, etc., and Dr. Wittels will give reviews of cases out of his experience of twenty-five years.

Dr. Wittels will give two other series of lectures during the spring term at the New School. On Thursday evenings, from 8:20 to 9:50, beginning January 23, he will deliver twelve lectures on "General Principles of Psychoanalysis: Psychoanalysis and Culture," and on Monday evenings beginning January 27 he will conduct a seminar for advanced students, on "Psychoanalysis in Practice."

Among other New School courses, of interest to physicians, are the Wednesday afternoon and evening lectures on "Behavior Problems in Children" and "Case Studies in Mental Hygiene," beginning January 15, by Dr. David M. Levy, Chief of Staff, Institute for Child Guidance. Complete registration information may be obtained from the New School for Social Research, 465 West 23rd Street, New York.

# CORRESPONDENCE

## OTHER BOOKS FOR "THE DOCTOR AT EASE"

January 1, 1930.

Editor, N. E. JOURNAL OF MEDICINE,
*Dear Sir:*

Might I suggest two other books for the list that is pendent to your editorial "The Doctor at Ease"? I make bold to mention them because a colleague found them entertaining also. They are Mrs. Eddy, A Biography of the Virginal Mind, by Dakin, Scribner's, and The Story of San Michele, by Axel Munthe, Dutton's.

The latter is a particularly refreshing autobiography of a doctor who practiced in the highest as well as the lowest circles of Europe. Always poised, never posed, he covers a sufficiently wide field to make his story attractive to all of us, whether we practice in the Back Bay or the Backwoods.

Very truly yours,

DWIGHT O'HARA.

## ARTICLES ACCEPTED BY THE AMERICAN MEDICAL ASSOCIATION COUNCIL ON PHARMACY AND CHEMISTRY

535 North Dearborn St., Chicago, Ill.,
December 28, 1929.

*Managing Editor,*
The NEW ENGLAND JOURNAL OF MEDICINE:

In addition to the articles enumerated in our letter of November 29, the following have been accepted:

E. Bilhuber, Inc.
Lenigallol-Zinc Ointment

Cutter Laboratory
Scarlet Fever Streptococcus Antitoxin-Cutter

Mead Johnson & Co.
Mead's Viosterol in Oil 100 D

H. K. Mulford Co.
Ampules Sodium Cacodylate-Mulford, ¾ grain, 1 cc.
Ampules Sodium Cacodylate-Mulford, 3 grains, 1 cc.
Ampules Sodium Cacodylate-Mulford, 5 grains, 1 cc.

Winthrop Chemical Co., Inc.
Tablets Tutocain No. 6

The following article has been exempted and included with the List of Exempted Nonmedicinal Articles (New and Non-official Remedies, 1929, p. 485):

Child Welfare Guild, Inc.
Bite-X

Yours truly,
W. A. PUCKNER, *Secretary,*
Council on Pharmacy and Chemistry.

## THE RESULT OF THE STUDY OF BARBERS AND BARBERING

The Commonwealth of Massachusetts
Department of Public Health
State House, Boston

January 2, 1930.

NEW ENGLAND JOURNAL OF MEDICINE:

Since 1675 doctors in the State helped us by answering our questionnaire in the investigation of barbers and barbering which the Legislature directed, we would like to report to them through your columns a brief summary of our findings.

(1) All the state and city health authorities outside Massachusetts who had regulations on barbering and expressed an opinion felt it to be a matter of minor health significance. All the boards of barber examiners felt just the opposite. No local health authorities in Massachusetts felt that added authority in this matter was needed.

(2) Only 16.3 per cent. of the doctors replying felt that they had ever seen diseases attributable to barber shops. In a year and a half these 274 men had seen 654 cases, of which 58 per cent. were pustular skin infections, 35 per cent. could not be classified, and 7 per cent. were scattered among nits, ringworms and syphilis (!). However, we felt that more should be known epidemiologically before accepting the few cases of syphilis which were re-

ported by the five physicians claiming 34 per cent. of all the cases.

(3) In response to repeated newspaper requests and two public hearings, 40 persons in a population of over four million and a quarter reported to us that they felt that at some time in their lives they had been infected in a barber shop. Only 20 of these could be located. In 3 of them the claim seemed reasonable.

(4) At the two hearings some did and some did not think further regulation and licensing of barbers was needed.

(5) The six barbering schools that could be located left much to be desired pedagogically.

(6) Finally, 2439 shops widely scattered over different sized communities were visited. We found 34.5 per cent. in good sanitary condition, 18.4 per cent. bad, and 46.6 per cent. were in between. Details are, of course, included in the report. In general, the sanitary and aesthetic niceties were proportional to the prices charged.

(7) We concluded:

(a) Unquestionably there is an opportunity for improvement in the sanitary conditions of barber shops.

(b) Only a negligible amount of skin infection can be traced directly to barber shops.

(c) Authority for adequate supervision of barber shops equal to any in the country already exists, and in certain cities in the Commonwealth codes have already been adopted that are entirely admirable. Budget allowances must, of course, be made to permit a competent inspectional service.

(d) No evidence was obtained which would indicate that further legislation for the licensing, regulating or inspecting of barbers or barber shops was needed at this time.

Yours truly,

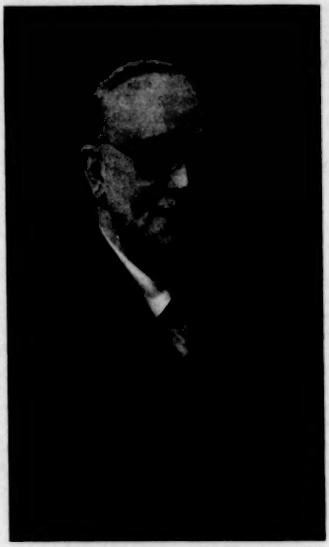
GEORGE H. BIGELOW, M.D.,
*Commissioner of Public Health.*

## OBITUARY

### A FAMILY DOCTOR. 1858 TO 1929

It is a great privilege to pay tribute to the memory of a man who for forty-seven years acted as doctor, counsellor and friend to thousands of people who came to him for help. Families through three generations have listened for his cheery greeting and have submitted to him their troubles and their problems. In health as well as in sickness they sought his guidance. The place that such a person fills in the community cannot be estimated; the shaping of a single life may have tremendous consequences and day in and day out this subtle influence goes on. Manifestations of the devotion of this man's many patients and friends were an inspiration that gave consolation in the sorrow of his going.

Herbert Warren White was born on Bunker Hill in Charlestown November 12, 1858 and, after boyhood days on a farm in Randolph, he entered the Harvard Medical School from which he graduated in 1880 in a class of 45. Although the Harvard Medical School plant on North Grove Street was at that time meager the faculty was a notable one including in its list such men as Oliver Wendell Holmes, Henry P. Bowditch, Reginald H. Fitz, David W. Cheever, James C. White, John Collins Warren, James J. Putnam and Henry J. Bigelow. With others of these school years Dr. White studied abroad after graduation in Vienna, Paris, London and Edinburgh.



HERBERT WARREN WHITE.

The following notice appeared in the *Norfolk County Register* for July 3, 1880:

"Herbert W. White, a former pupil of our (Braintree) High School* and known to many of our young people, has just completed his medical studies at Harvard, and last Wednesday (30th inst.) at the Commencement at Cambridge, was amongst those upon whom the degree of doctor of medicine was conferred. Although the youngest in his class to take such a degree, he was by no means distanced by his older competitors. He took the highest rank of excellence in Surgery, in which branch he seems especially interested. Far from being satisfied as yet, he intends to pursue his chosen studies abroad where the still greater advantages of European colleges are offered to students. Good luck to you, Doctor! It is a noble profession, and needs men well fitted for the great responsibility intrusted to them."

In Vienna last winter I found the street and num-

*And Essayist of his class at graduation, returning as Orator in 1883.—P. D. W.

ber where he lived for several months not far from the old Allgemeines Krankenhaus. In Paris he contracted smallpox but did not know it until a few days later in London when he was taken off to the Highgate Pest House. This experience with smallpox he described in an interesting article in the BOSTON MEDICAL AND SURGICAL JOURNAL in 1894, volume 130, page 91. Upon convalescing from this serious illness he had the rare opportunity of walking the wards with the great Lister as hitherto but little known.

After his return to America in 1881 Dr. White studied in New York before finally settling down in 1882 to his long life of forty-seven years of practice in Roxbury, Massachusetts. This practice he continued to the very moment of his sudden death on November 24, 1929. Service in the Outpatient Department of the Boston Dispensary and the Boston City Hospital was followed by his appointment as physician to St. Elizabeth's Hospital and lecturer and later Professor of the theory and practice of medicine at the Tufts College Medical School. He served at first under John Hildreth of Cambridge in this teaching position. In his journal he acknowledges his indebtedness to Dr. John Blake and Dr. Bundy of the South End and to Dr. Cotting of Roxbury for their fatherly assistance to him along the way. With Dr. Whittier of Brookline he started a church dispensary on Ruggles Street and this later grew into a small semi-private Baptist Hospital on the Parkway. For years he had full charge medically. The modern New England Baptist Hospital on Parker Hill has grown up from these small beginnings. As he says in his journal this was "perhaps the best baby Whittier and White ever brought into this old South End of Boston." Here may be added an obstetrical comment found in this same journal. "When serving the Boston Dispensary Obstetric clinic I took a room in Burrows Place near my friend, Dr. Kingman, and near the Dispensary so as to be handy on call. Kingman was serving with me. We were designated to help each other out and, if an operative case, to call Dr. Billy Richardson on Park Square as our consultant. On the side I believe we called him only twice all that winter. We did a big business for by the good Lord's favor and the very roomy build of most of our multiparas we learned a lot and established quite a reputation. . . . Though a bit irregular, we invented a kind of twilight sleep, that made us most popular in that district. We had the sweet foretaste of real reputation and we still keep secret between us never to be given away in these prohibition days a combination that worked while you slept (E E and A) or while the lady felt little but knew all the joy of motherhood."

Hard work day and night for many years followed his early days of practice. Hardly a moment could he call his own and yet he felt much joy in this service to his fellows and he won a great place in their hearts and minds. I can clearly recall those days when in his buggy he drove all over Roxbury and Dorchester to see his patients; on Saturday mornings when there was no school I frequently rode with him to hold the reins while he ran into a house, so that he would not need to delay to take out the weight to keep the horse from running away. On special occasions I was turned over to the Sisters at the hospital for entertainment during ward rounds and these visits were rare treats for me. On holidays and Saturday afternoons when the weather and patients would allow the whole family would be packed into the old carry-all and away we'd go for a picnic among the Blue Hills. Those were red letter days for everybody.

As the years went by the burden of work grew greater until it seemed to us an impossible one with constant interruption of sleep and meals. Then began a series of travels for respite and thenceforth for the last twenty years of his life he journeyed at intervals far and wide, always making new friends wherever he went. He wrote in his journal "I learned not to be loaded up with a lot of possessions and burdens that have no permanent values. Oh that we are all so slow to recognize real true values beforehand and thereby have fewer regrets and more rejoicings. Investments in books and travel and church have given me the most satisfaction and paid me the biggest dividends." As deacon in his church and officer of the Roxbury Charitable Society he made his influence felt outside of his medical service and sphere. Everyone appreciated his common sense in all matters medical and otherwise, and his advice was widely sought.

In spite of his heavy practice he kept up eagerly and well with the scientific advances of the times, reading exhaustively and attending medical meetings whenever he could. He took great delight through many years in the meetings of the Boston Baptist Social Union, in the intimate assemblies at dinner of the old Roxbury Society for Medical Improvement, and in the courses of the Lowell Institute. Occasionally he wrote letters or short articles for publication, medical or non-medical, one of the last of which was a review of Professor Charles H. LaWall's interesting volume entitled "Four Thousand Years of Pharmacy" published in this JOURNAL, November 10, 1927, Vol. 197, page 877.

I cannot do better in closing my brief sketch of the life of this physician, my father, than to give a further quotation from his journal written in 1928. "When a man has lived three score and ten years he has finished Volume I anyway and whatever is added must be footnotes and appendices. . . . One sure thing he has learned if observant, to know himself and no longer to be surprised by the animal. And yet I am more certain than ever that this body is not myself, that it is the tenement only in which I, the tenant, have taken rooms. I bow reverently before the Power and Force that started this spark of Life in this body as dumb as my watch, a lump of clay that without its occupant would be only a lump of clay and nothing more. The man myself, the ego, the higher occupant who looks out at you as from a window is only the chrysalis of what I may yet be in some transition,

for the tenement is very much out of repair and I need to move out for my own good. . . . I have lived long enough to see that eventually Right and Truth do survive, that the real scientific practice of medicine is only just begun and that there must be some startling and most wonderful victorious discoveries just ahead. So I hail my descendants of only a few generations ahead almost as "supermen" indeed, only hopeful that they will not scorn the links in the chain that came before. We have a modest place in this triumphant Victory and grand procession; we have stumbled along but the path was obscure and we kept our feet. Thank God we did not fall down on the way!"

PAUL D. WHITE.
Boston.

## NEWS ITEMS

DR. M. J. ROSENAU AND DR. REID HUNT WILL ATTEND THE MEETING OF THE ADVISORY BOARD OF THE HYGIENIC LABORATORY—The United States Public Health Service has requested Dr. Milton J. Rosenau and Dr. Reid Hunt to attend a meeting of the Advisory Board of the Hygienic Laboratory on January 18, 1930.

THE THERONOID—The National Better Business Bureau has issued a pamphlet setting forth the results of an investigation of The Theronoid and Its Promotion which is interesting.

## NOTICE

Dr. Fred S. Thorne wishes to announce that he has succeeded to and will continue the practice of the late Dr. P. Somers Smyth, with whom he has been associated. The Professional Building, 270 Commonwealth Avenue, Boston.

## REPORT AND NOTICES OF MEETINGS

### THE THETA KAPPA PSI FRATERNITY

Theta Kappa Psi Fraternity, Gamma Theta Chapter of Tufts Medical School, held a meeting at the fraternity house at 1203 Boylston Street, Wednesday, January 8. The following students were initiated:

Johnson L. Bean, 1933, Center Harbor, N. H.
Franklin E. Campbell, Jr., 1933, W. Medford, Mass.
Peter D. Coumoundoureas, 1933, Lowell, Mass.
Walter G. Dixon, 1933, Waterville, Conn.
Lewis C. Donahue, 1933, Needham, Mass.
Nicholas J. Giannestras, Boston, 1933.
Frederick C. Hanson, Southbridge, Mass., 1933.
Joseph W. Lentino, 1933, Billerica, Mass.
Namer R. Namay, 1933, Lowell, Mass.
Donald A. Nickerson, 1933, So. Hamilton, Mass.
Conrad Nobili, 1933, Quincy, Mass.
Lorrimer M. Schmidt, 1933, No. Billerica, Mass
Nicholas A. Pournaras, 1932, Providence, R. I.

The officers of the fraternity are:
Pythan: Martin F. Buell, 1930, Union City, Mich.
Vice-Pythan: Malcolm J. Farrell, No. Woburn, Mass., 1931.
Secretary: Michael F. Nigro, 1931, Medford, Mass.
Bursar: Henry S. Glidden, 1931, Melrose, Mass.

### NEW ENGLAND PEDIATRIC SOCIETY

The annual meeting of the New England Pediatric Society will be held at the Boston Medical Library on Friday, January 10, 1930, at 8:15 P. M.

I. The report of the Council.
II. The Treasurer's Report.
III. The following papers will be read:
1. A Simple Therapeutic Arc, Eugene Peck, M.D., New London, Conn.
2. Differential Diagnosis in Acute Appendicitis, George D. Cutler, M.D., Boston.
IV. Election of Officers.

Light refreshments will be served after the meeting.

EDWIN T. WYMAN, M.D., *President.*
RANDOLPH K. BYERS, M.D., *Secretary.*

### ANNUAL MEETING OF THE AMERICAN SOCIETY OF STOMATOLOGISTS, NEW YORK CITY, MAY 2, 1930

The seventh anniversary meeting of the stomatologic movement in America will be held under the auspices of the American Society of Stomatologists at the Hotel McAlpin, New York City, May 2, 1930. A cordial invitation is extended to all dental practitioners and general physicians to attend these meetings. Members and non-members who wish to take part in the program will please communicate with the chairman of the meeting, Dr. King S. Perry, Jeannette, Pa.

### THE HARVARD MEDICAL SOCIETY

The next meeting of the Harvard Medical Society will be at 8:15 on Tuesday evening, January 14, in the Amphitheatre of the Peter Bent Brigham Hospital.

PROGRAM

Presentation of cases.

The Treatment of the Convulsive Toxaemia of Pregnancy by Removal of Blood Plasma and Reinfusion of Corpuscles. By Dr. Frederick C. Irving, Assistant Professor of Obstetrics, Harvard Medical School.

WILLIAM P. MURPHY, M.D., *Secretary.*

### PLYMOUTH DISTRICT MEDICAL SOCIETY

The January meeting of the Society will be held at the Brockton Hospital, Thursday the 16th, at 11 A. M.

BUSINESS

1. Report of the secretary for July and October meetings.
2. Report of treasurer.

3. To see what action the Society will take to replenish deficiency in the treasury.

4. To see what action the Society will take to authorize the legislative committee to entertain the legislators of the Plymouth County for the purpose of explaining the bills pertaining to the medical profession impending before the legislature of 1930. With the approval of Dr. Greenough, the president has appointed the following legislative committee:

Dr. George A. Moore, Brockton, Chairman.
Dr. R. B. Rand, North Abington.
Dr. Walter Pulsifer, Whitman.
Dr. J. J. McNamara, Brockton.
Dr. A. C. Smith, Brockton.
Dr. John P. Shaw, Brockton.
Dr. Charles Hammond, Hanover.
Dr. Edgar D. Hill, Plymouth.
Dr. E. J. Beaulieu, Whitman.
Dr. A. W. Carr, Bridgewater.
Dr. J. H. Dunn, Rockland.
Dr. I. I. Richmond, East Bridgewater.
Dr. W. K. Noyes, Duxbury.
Dr. Thomas H. McCarthy, Ex-Officio.

LITERARY PROGRAM

"Puerperal Sepsis," Dr. Charles E. Mongan.

Face presentation illustrated with moving pictures.

Breech presentation illustrated with moving pictures.

The whole of the literary program consumes about one hour and twenty-five minutes. The talk on "Puerperal Sepsis" by Dr. Mongan is a short statement of what the Section on Obstetrics and Gynecology is recommending as preventive measures. No physician who includes obstetrics in his practice can afford to absent himself from this moving picture demonstration. The moving pictures are furnished through the courtesy of the Section of Obstetrics and Gynecology of the Massachusetts Medical Society.

Dinner will be provided at 1 P. M. through the courtesy of the Executive Committee of the hospital.

On account of the limited time and length of program, the meeting will convene promptly at 11 a. m.

SUBSEQUENT MEETINGS

March 20, 1930, Moore Hospital. Speakers to be announced later.

April 17, 1930, Annual meeting, Commercial Club, Brockton, 7 P. M. Election of officers. Annual oration, Dr. Frederick F. Weiner, "The Management of Prostatic Diseases," with moving pictures.

G. A. MOORE, M.D.,
*Secretary Plymouth Medical Society.*

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## CLINIC AT THE BOSTON CITY HOSPITAL

A clinic will be held at the Boston City Hospital, Saturday, February 25, 11.00 A. M. to 12.30 P. M.

GYNECOLOGICAL AND OBSTETRICAL SERVICE

Dr. John T. Williams, Pyelitis of Pregnancy. (Lantern Slides.)

Dr. Reginald D. Margeson, Transverse Cervical Caesarean Section.

Dr. Frederick L. Good (to be announced).

MEDICAL SERVICE

Dr. Cadis Phipps, Angina Pectoris.
Dr. Thomas J. O'Brien, Lung Abscess.
Dr. Joseph M. Lynch, Carcinoma of the Lung.

SURGICAL SERVICE

Dr. David D. Scannell (to be announced).
Dr. Somers Fraser (to be announced).
Dr. Edwin Harding (to be announced).

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## FIRST INTERNATIONAL CONGRESS ON MENTAL HYGIENE TO BE HELD AT WASHINGTON, D. C., U. S. A., MAY 5-10, 1930

*PROGRAM*

Many subjects are listed on the program of the First International Congress on Mental Hygiene, just received from John R. Shillady, Administrative Secretary, 370 Seventh Ave., New York City. Practically all aspects of mental hygiene will be covered at the Congress. Details of the program have been worked out by a committee of which Dr. Frankwood E. Williams, medical director of the National Committee for Mental Hygiene, is chairman, collaborating with correspondents in many countries. Topics are now ready for publication, and are contained in an informing, 33-page *Preliminary Announcement*, obtainable from headquarters office. As some of our readers know, President Hoover has accepted the honorary presidency of this Congress, and delegates are expected from more than thirty countries.

Following are some of the subjects, phased in general descriptions—not as specific titles of papers:

(a) Magnitude of the mental hygiene problem as a health problem.

(b) Organization of community facilities for prevention, care and treatment.

(c) Organization of the mental hospital and its rôle in community life.

(d) Psychopathic hospitals and psychopathic wards in general hospitals.

(e) Care and treatment of mental patients outside of institutions.

(f) Organization of special types of clinical service, as in courts of justice, out-patient departments of hospitals, community clinics, *grade and high school clinics, college clinics*, and clinics in social welfare agencies.

(g) Types of personnel required in mental hygiene work (physician, psychologist, nurse, social worker, and occupational therapist).

(h) Methods of training of different types of personnel.

(i) Clinical and social research in the field of mental hygiene.

(j) Teaching of mental hygiene and psychiatry in the medical schools: (1) courses for the general student; (2) courses for the student specializing.

(k) Mental hygiene in industry, personnel work and vocational guidance.

(l) Psychiatric social work, its scope and functions.

(m) Mental hygiene aspects of delinquency, dependency, and other types of social maladjustment.

(n) Marital relationships.

(o) Social aspects of mental deficiency.

(p) Mental hygiene and education; grade school, high school, college.

(q) Special problems of adolescence.

(r) Problems presented by children of special type; (1) the child with superior intelligence; (2) the neurotic child; (3) the child with sensory and motor defects.

(s) Methods and possibilities of the child guidance clinic.

(t) Significance of parent-child and teacher-child relationships in character and personality development.

(u) Parent and teacher training.

(v) Mental hygiene of religious, ethical and moral teaching.

(w) Problems of the pre-school period.

(x) Significance of these problems for the future of the child as individual and as citizen.

(y) Possibilities in the future of human relationships in the light of an increasing knowledge of those factors that help and hinder the emotional, physical, and intellectual development of the individual.

The American Psychiatric Association and the American Association for the Study of the Feeble-minded will hold their annual meetings in Washington at the same time as the First International Congress, and hence the largest number of people interested in mental hygiene ever gathered together at one place and time will probably meet in Washington that week.

It is the purpose to have a maximum of discussion and minimum of formal paper-reading.

General sessions, designed to appeal widely to laymen, will be held on several evenings.

Members of the Program Committee are: Dr. Williams, chairman; Dr. C. Macfie Campbell, Director, Boston Psychopathic Hospital and Professor of Psychiatry, Harvard University; Dr. William Healy, Director, Judge Baker Foundation; Dr. Lawson G. Lowrey, Director, Institute for Child Guidance, New York City; Dr. Howard W. Potter, Assistant Director, Psychiatric Institute and Hospital, New York City; Dr. Arthur H. Ruggles, Superintendent, Butler Hospital, Providence, R. I.

In addition, persons residing in twenty-eight different countries are represented on the Advisory Committee on Program.*

*Administrative Office, 370 Seventh Avenue, New York, N. Y. Telephone Pennsylvania 1400. John R. Shillady, Administrative Secretary; Winthrop D. Lane, Staff Associate and Publicity.*

## SOCIETY MEETINGS, CONGRESSES AND CONFERENCES

1929-1930—Massachusetts Dietetic Association. Complete schedule appears on page 852, issue of October 24.

January 9—Massachusetts General Hospital. Complete notice appears on page 55, issue of January 2.

January 10—New England Pediatric Society. Detailed notice appears on page 92.

January 14—The Harvard Medical Society. Complete notice appears on page 92.

January 16—The New England Heart Association. Detailed notice appears on page 55, issue of January 2.

February 3—American Heart Association. Complete notice appears on page 1181, issue of December 5.

February 10-14—American College of Physicians. Complete notice appears on page 853, issue of October 24.

February 25—Clinic at the Boston City Hospital. Detailed notice appears on page 93.

March-October — International Medical Postgraduate Courses in Berlin. Complete notice appears on page 853, issue of October 24.

April 14-18—The New England Public Health Institute. Complete notice appears on page 55, issue of January 2.

May 2—Annual Meeting of the American Society of Stomatologists. Detailed notice appears on page 92.

May 5-10—First International Congress on Mental Hygiene. Detailed notice appears on page 93.

September 4-8—Fifth International Congress on Physiotherapy. Complete notice appears on page 906, issue of October 31.

October 27—The American Public Health Association. Detailed notice appears on page 1271, issue of December 19.

## DISTRICT MEDICAL SOCIETIES

### Essex North District Medical Society

May 1—Thursday—Censors' meeting at Hotel Bartlett, 95 Main Street, Haverhill, (Telephone 3450) at 2 P. M. sharp. Candidates should present their diplomas to the Secretary one week in advance.

May 7—Wednesday—Annual Meeting.

J. FORREST BURNHAM, Secretary.

### Essex South District Medical Society

Wednesday, February 5, 1930—Council Meeting, Boston.

Wednesday, February 12, 1930—Danvers State Hospital, Hathorne. Clinic 5 P. M. Dinner 7 P. M. Speakers: Dr. Winfred Overholser. Subject: "Criminology and Psychiatry." Mr. Clark, District Attorney for Essex County, who will speak on the legal aspect.

Wednesday, March 5, 1930—Lynn Hospital. Clinic 5 P. M. Dinner 7 P. M. Speaker: Dr. R. S. Titus, Boston. Subject: "Some Aspects of Caesarean Section," illustrated with Moving Pictures. General Discussion from the floor.

Wednesday, April 2, 1930—Hotel Hawthorne, Salem. Dinner at 7 P. M. Speaker: Dr. Timothy Leary, Boston. Subject: "Diagnostic and Therapeutic Pitfalls in Intracranial Pyogenic Infections."

Thursday, May 1, 1930—Censors meet for Examination of Candidates at Salem Hospital at 2:30 P. M.

Tuesday, May 13, 1930—Annual Meeting. The Tavern, Gloucester. Speaker: Dr. C. Macfie Campbell, Director of Boston Psychopathic Hospital. Subject to be announced later. Ladies invited. Dancing.

R. E. STONE, M.D., Secretary.

### Franklin District Medical Society

The meetings of the Franklin District Medical Society will be held at the Weldon Hotel, Greenfield, Mass., on the second Tuesdays of January, March and May, at 11 A. M.

CHARLES MOLINE, Secretary.

### Hampshire District Medical Society

Meetings of Hampshire District will occur at 11 A. M. the second Wednesdays of February and April and will be held at the Dickinson Hospital, Northampton. The annual meeting will be held in May.

LUTHER O. WHITMAN, M.D., Secretary.

### Middlesex East District Medical Society

January 15—At Boston, Harvard Club.

March 12—At Melrose.

May 13—At Unicorn Country Club, Stoneham.

ALLAN R. CUNNINGHAM, Secretary.

### Middlesex South District Medical Society

Winter meetings—jointly with Suffolk District.

April 16, 1930—Annual meeting. Commander Hotel, Cambridge. Program to be announced.

May, 1930—Censors' meeting.

ALEXANDER A. LEVI, Secretary.

### Norfolk District Medical Society

January 27, 1930—Roxbury Masonic Temple. "Recent Advances in Diagnosis and Treatment of Syphilis." The speakers will be Drs. C. Morton Smith and Austin W. Cheever.

February 24, 1930—Roxbury Masonic Temple, 8:00. Dr. Edwin H. Place has been invited to read a paper and has been given carte blanche in the selection of his subject.

March 24, 1930—Roxbury Masonic Temple. Dr. Burton E. Hamilton. Subject to be announced.

May 6, 1930—Annual Meeting. Program to be announced.

The Censors meet for the examination of candidates, May 1, 1930, in the Roxbury Masonic Temple, 171 Warren Street, Roxbury, at 4:00 P. M.

Applications must be in the hands of the Secretary at least one week previous to date of examination.

Owing to inability to engage the Roxbury Masonic Apartments on the last Tuesday of the month, such meetings as will be held in the Roxbury Temple will be held Monday evenings as per the dates above.

FRANK S. CRUICKSHANK,
Secretary, Norfolk District Medical Society.

### Plymouth District Medical Society

January 16, 1930—Brockton Hospital, 11 A. M. Dinner at the hospital 1 P. M. Program: Puerperal Sepsis, Dr. Charles E. Mongan; Face Presentation, illustrated with moving pictures; Breech Presentation, illustrated with moving pictures. Detailed notice appears on page 92.

## BOOK REVIEWS

*Oesophageal Obstruction: Its Pathology, Diagnosis and Treatment.* By A. LAWRENCE ABEL. Oxford Medical Publications; published by Humphrey Milford, Oxford University Press. Price $9.00.

This monograph on oesophageal obstruction is a very complete treatise on the subject. The first two chapters are devoted to anatomical and physiological considerations. Now follow two chapters on general diagnosis and treatment, which include, in addition to an account of X-ray examination, a very detailed description of the various instrumental procedures that are used in the examination and treatment of oesophageal lesions. After these come chapters dealing with the special types of obstruction, the largest amount of space being devoted to cardiospasm and other neuropathic affections of the oesophagus, to diverticula, and to cancer of the oesophagus.

The book is attractively gotten up; the style is clear and concise, the illustrations are numerous and well-chosen and the bibliography is extensive. While the presentation is unnecessarily detailed and technical for the needs of the average physician or surgeon, they would find it a valuable reference book; and for anyone specializing in treatment of diseases of the oesophagus or thorax, it would prove a very valuable addition to their library.

*The Diagnosis and Treatment of Arthritis.* By RUSSELL L. CECIL. Oxford Monographs on Diagnosis and Treatment, Edited by Henry A. Christian, M.D., Sc.D., LL.D., Volume VI. New York: Oxford University Press, 1929. viii + 216 pages.

This volume on arthritis by Dr. Cecil of New York continues the high standard set by previous volumes of this series. It is a pleasure to read such a clear-cut account of the various types of arthritis. Many of the articles, naturally, are short, but they cover the ground thoroughly enough to satisfy the average practitioner in regard to both diagnosis and treatment.

The publisher continues to use the same form for this book, with large, clear type, well spaced. This series of books should receive the highest recommendation and it is hoped that they will fall into the hands of many practitioners and be used with profit.

*The Story of San Michele.* By AXEL MUNTHE. New York: E. P. Dutton & Co., 1929. xvi + 530 pages. $3.75.

Dr. Munthe has written a most unusual autobiography, charming in parts, brilliant, sparkling and always interesting. Dull must be the mentality that cannot enjoy such a book. His life was full of adventure; he ascended the high places of his profession, although he occasionally dropped to the low levels. On the heights he was at his best and here we like to think of him, a volunteer worker at Messina, a saviour of cholera-ridden Naples. He was born in Sweden and went to Paris as a young man, where he was graduated in medicine, in 1880, a favorite pupil of Charcot and the youngest doctor ever to receive a degree in France. After his years at the old Salpêtrière, he started in to practise in Paris; his success was immediate and astounding. Because of his dominating and apparently fascinating personality as a very young man he soon captured the fashionable clientele of Paris in the '80's. He tells the story of his life at this time with great gusto; he was neurotic, spontaneous, intuitive, clever, generous to a fault, independent and often at odds with his fellow practitioners. He did considerable work in the lower strata of Paris life, especially among the Italian and Scandinavian population; from poverty, however, he would jump dramatically to the bedroom of a countess with untold luxury around her. Always of an adventurous mind, even during his vacations in Europe he was sure to fall into some exciting situation. He became very much overworked and a victim of insomnia so that he had to quit his active life. He went to one of the most beautiful places in the world, Anacapri, a little town situated on the very tip-top of the island of Capri in the Bay of Naples. As a boy, wandering through Europe on a vacation, he had discovered there an old chapel called "San Michele" and all during his student days and even when in active practice in Paris, he had dreamed of the wonderful little chapel which he hoped to turn into a home on the top of this lovely mountain. When he left Paris, therefore, he went back to San Michele and started to build his house. He found, however, that in spite of his extensive and lucrative practice in Paris, he had never saved any money and he could not go on with his building. To overcome this difficulty he went to Rome and soon flourished there with even a larger practice among fashionable people and the nobility. When he had sufficient of this world's goods, he retired to San Michele and built his house, where he lived for many years until blindness forced him to retire.

All the story is told in a very delightful, sweeping manner; part of it seems almost incredible. For pure pleasure one could hardly recommend a book more highly than this one. Munthe, of course, cannot be considered, by any manner of means, a great man. His life was, however, full of interest. He

did some excellent but impulsive work, such as, for instance, caring for hundreds of people during a Naples epidemic of cholera and later a similar though less extensive work at Messina. The real value of the book, however, is in the delineation of the spirit of high-mindedness of the author with his shrewd summary of the superficiality of much of his practice in the past and his delightful word-pictures of people that he met in his swift, erratic journey through Europe.

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*An Introduction to the Study of the Nervous System*, by E. E. Hewer and G. M. Sanders. St. Louis: The C. V. Mosby Company, 1929. 12+104 pages. Price, $6.50.

This is an English textbook, printed in England but published in this country. It is highly praised by Dr. S. I. Schwab of the Washington University Medical School, St. Louis, who writes the American introduction. The book is intended to be used in medical schools, presumably in connection with the beginnings of clinical neurology, in the third year of the curriculum. Its value lies largely in the excellent diagrams printed in colors, showing the pathways of the neurones of the central nervous system, and the book should prove useful to American students.

The running text is not, perhaps, so good as the illustrations. One finds occasional errors; changes could be suggested for future editions. The authors, for instance, uphold the theory of secretion of the spinal fluid, one not usually accepted at present. They speak, also, of the normal cerebrospinal pressure as 4 mm. Hg., about one-half that usually accepted by most physicians. One might criticise, in addition, the author's explanation of the Lange colloidal gold test. No reference, moreover, is given in this chapter to the best book on the cerebrospinal fluid, by their own countrymen, Greenfield and Carmichael.

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*Precis de Physioco-Chimie*, Biologique et Medicale. A text-book by Andre Dognon, Professeur Agrege de Physique Medicale a la Faculte de Medicine de Paris. Masson et Cie. 1929. Price 36 fr.

This interesting book of 310 pages is written in French and is in the form of a text-book. It includes most of the physical phenomena in which the biologist-scientist is interested. Thus the book starts with a study of physical phenomena, particularly in reference to biology. It continues into a discussion of the osmotic pressure, diffusion, ionic measurements such as determination of pH and the significance of the hydrogen ion in biology. It then takes up the subject of absorption, viscosity, the discussion of the significance of colloids, and finally a short chapter on the general properties of membranes. Books on these subjects are rare so that Dr. Dognon's contribution will fill a needed place in our libraries. The book is written for those relatively ignorant of physical phenomena and it fills a great need of our younger scientific men who are interested in modern biology. To them this book is recommended as a source of easily acquired knowledge.

*The Chemical Aspects of Immunity.* By H. Gideon Wells. Second (Revised and Enlarged) Edition. The Chemical Catalog Company, Inc., New York, 1929. $6.00.

The present edition of this work is based closely on the earlier edition, to which has been added the new material appearing in the intervening four years. The number of pages is about thirty greater than before. One noticeable improvement is that the references and footnotes are now placed on the page to which they refer instead of being collected at the chapter-ends. The reviewer would suggest that in subsequent editions the footnotes, at any rate, be printed in larger type. This, with the addition of a few references to work which may be familiar to most chemists but is not so well known to immunologists, would make the volume one of which adverse criticism would be difficult.

The author's intention to be as brief as is consistent with clarity has been well carried out. A great mass of material has been made available in understandable form, making the chemical aspects of his problems clearer to the immunologist and suggesting to the chemist biological methods which may be of value to him. This book, therefore, gives a broad and valuable background for the chemist or bacteriologist engaged in immunological work.

The type, paper and binding are excellent.

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*Études Neurologiques.* Par Georges Guillain. 3rd Series. Paris: Masson et Cie, 1929. 8 + 453 pages. Price, 70 francs.

Guillain's papers, the results of many years of observation and research at the Salpêtrière, have been collected in a bulky volume, the third of a series. The papers cover a wide variety of neurological subjects, although most of them deal with the pathology of the central nervous system. There is a good chapter on certain types of cerebral tumors, especially those due to the cysticercus, a rare form. Other parts of the book deal with pathological studies of the cerebrum, spinal cord and the cranial nerves. There are a number of cases illustrative of muscular atrophy. The book closes with a sympathetic account of the life of Duchenne.

Collections of scattered papers by a single author are valuable and this book is no exception. On the other hand, one misses a careful index, which would aid greatly in the use of such a volume. The book is beautifully printed, on the finest paper, and although it comes in a paper cover, it is a welcome addition to French neurological literature, by a man who has played an outstanding rôle in the development of his subject, in the last twenty-five years.

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*Dr. Colwell's Daily Log for Physicians.* Colwell Publishing Co., Champaign, Illinois. Price $5.00.

This account book for physicians is well put together and is made of excellent materials. It contains a page for every day with columns headed:

Hour; Name of Patient; Service Rendered; Charge; Cash; Received on Account.

There is a page at the end of each month for a summary of the month's work, and two pages in each month for tabulating expenses to be deducted from income tax returns.

The book appears to be practical and well designed for its purpose.

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*Common Infections of the Female Urethra and Cervix* By FRANK KIDD, M.A., M.Ch. (Cantab.), F.R.C.S. (England) and A. MALCOLM SIMPSON, B.A., M.B., D.P.H. (Cantab.) with additional chapters by George T. Western, M.D. and M. S. Mayou, F.R.C.S. Published by Humphrey Milford, Oxford University Press. 197 pages. Second Edition.

The first edition of this monograph was very favorably reviewed in this JOURNAL in 1925. The Second Edition differs in no way from the first except by the addition of a chapter on certain improvements in technique. Kidd and Simpson base their opinions upon a study of 650 women and children treated at the London Hospital. They believe that gonorrhoea in the female is much easier to cure than is generally thought, but this result is obtained only by thorough treatment of all foci. Daily irrigations of the urethra with potassium permanganate are a part of this routine. For sterilization of the cervical canal they have depended chiefly on 2% acriflavine, although recently they have found anosol (the composition of which they do not give) an even better agent.

In the management of gonococcus arthritis they advocate acupuncture or through and through irrigation of the infected joint, and early active motion.

The book is extremely practical; mastery of the advocated technique, which is not at all complicated, should enable any practitioner to deal successfully with a very large proportion of his cases of gonorrhoea in the female.

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*Interns Handbook.* Published by J. B. Lippincott Co., U. S. A. Pages 254. 1929.

This book, written primarily for the guidance of interns, contains a great deal of valuable information. This is presented in a clear, concentrated form, so arranged that quick reference is possible. The treatment of poisoning and of emergencies is especially well handled. There is a list of commonly used drugs, with comments on their employment; diet lists and the essential steps in preparation for X-ray studies are given. There are a few typographical errors, such as the substitution of the symbol for a drachm in place of that of an ounce on page 3. The book is one of the best of its kind, and should be useful to practitioners as well as to interns.

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*The Newer Knowledge of Nutrition.* Fourth Edition. By E. V. MCCOLLUM and NINA SIMMONDS. The Macmillan Co., New York City. 1929. Price $5.00.

Another edition of Dr. McCollum's book is a welcome addition to the literature on nutrition. The book has been generally rewritten by omitting unimportant phases and by the addition of some of the more recent studies on the subject. In the first portion a historical résumé of nutrition, a description of the biological method of analyzing food, and a discussion of the protein requirements for optional nutrition are given. Most of the book, however, consists of studies on the vitamins, and includes the clinical as well as the experimental work on ophthalmia, beriberi, scurvy, rickets, reproduction and pellagra. Several chapters are devoted to rickets, which include the results of ultra-violet ray treatment and the effects of irradiated foods in this disease. Another chapter describes calcium assimilation. In the end of the book, iodine deficiency, food and blood regeneration, the nursing mother, the dietary habits of man, and diet in relation to the structure of the teeth and the resistance to disease are commented on.

Though the chemistry is more fully described than the pathology of nutrition, all phases of the subject are taken into account. The style is easy though accurate, and numerous illustrations make the text readily understood. A very full bibliography is useful for references and a more extended knowledge of some phases of the subject, and the index, though not comprehensive, appears adequate. The paper and the printing are a decided improvement on the earlier editions.

The subject of nutrition is slowly but surely becoming recognized in the practice of medicine; and therefore this comprehensive treatise should not only interest but be of value to nutrition workers, students, and practitioners.

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*International Clinics.* Volume III, Thirty-ninth Series, 1929. J. B. Lippincott Company. 1929.

For any physician seeking diversified medical reading — authentic and absorbing — this volume is highly recommended. Two excellent contributions emanate from the Pharmaceutical Society of Great Britain: (1) Recent research on the vitamins and its clinical application by Coward and (2) Standardization of biological products by Burns. In the latter, the author urges that we accept Trevan's suggestion that the term "minimal Lethal dose" be abolished and "average Lethal dose" be substituted.

On the basis of animal experimentation, it has been shown that there is such a variation in the normal response to various biological products that erroneous conclusions may be drawn from isolated quantitative results. "It bears a lesson for the clinician that all forms of human response will be subject to similar variations. At the present time, it is customary to speak of a normal figure for any biological property, and to regard as abnormal any appreciable deviation from it. There is a normal blood-pressure, a normal tolerance for aspirin, a normal menstrual period, a normal duration of pregnancy, to choose but a few examples. It is of great clinical importance that it should be realized that the evidence from the laboratory does not support this view. The variation in healthy individuals in these and all other properties must be far greater than the ordinary teacher of medicine supposes. It should be his care to investigate its extent and to

impress its significance upon his pupils, in order that the erroneous conception that departures from an average are abnormal, and represent an idiosyncrasy, may be driven out of medical terminology."

Waugh discusses "The significance of chronic hoarseness in adults," presenting many illustrations, and believes that its significance is greatly underestimated by the average practicing physician. James J. Walsh writes of the old and new in medicine with his usual literary skill. There is an exhaustive review of the treatment of anemia by Levine. The medical expert is eloquently defended by Paul E. Bowers, whose peroration is worth quoting. "Some day when the legal profession has reached the milestones of progress set by medical science, the jurists will not always placidly and contentedly peruse their books alone, instead of devoting some time to study of the man accused of crime. Some day the members of the legal profession will not always seek in ancient and ponderous volumes of the legal graveyard of the dead past for moth-eaten and timeworn decisions to use as precedents for the regulation of the conduct which springs from the hidden sources of a disordered mind. Some day the medical profession, which is the eternal proselytizer for reform, the eternal seeker after truth, will not be so visionary, so radical, so revolutionary as to attempt to overturn in their scientific haste the legal safeguards of court procedure which the law has built around us for our security. And then, calmly, deliberately and without bitterness these two learned professions will co-öperate and move forward hand in hand in their efforts to secure justice, and will cease to starve their souls on the husks of dogmatic and professional differences."

Articles on surgery and pharmacy, the usual medical questionnaires are also included and add to a volume of great merit.

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*Childbirth.* By WILLIAM GEORGE LEE, A.B., M.D. The University of Chicago Press, Chicago, Illinois.

Dr. Lee's book is in many ways an interesting contribution to obstetrical work. The exact classification of this book is difficult for the reviewer. It surely can not be regarded as a text book, and it is obviously more than a monograph. Dr. Lee's style is easy and flowing. He has a strange combination of new and old ideas. His standards are obviously high, and yet the technique that he advocates is, to say the least, not modern. His description of a set-up for an operative delivery and his technique of a Caesarean section are not, in the reviewer's opinion, good. Some of his chapters are very elementary and he deals with them satisfactorily. Others are much too complicated for the average student. Many of the points that he makes are excellent, but the details of them and the reasons for them are not sufficiently explained for a student to appreciate. He passes over with slight consideration the absolute necessity of medical care during the pregnancy, and his paragraphs on contracted pelvis are anything but satisfactory. He has given many pages to the use of forceps, and it is decidedly the best part of the book. There are not a few typographical errors. The book is not one for the student, but for the obstetrical specialist it is interesting reading and as an effort to have a higher standard in obstetrics it is worthy of praise.

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*Principles and Practice of Obstetrics.* By JOSEPH B. DELEE, A.M., M.D., Professor of Obstetrics, Northwestern University Medical School. Fifth Edition, Thoroughly Revised. Large octavo of 1140 pages, with 1128 illustrations, 201 in colors. Philadelphia and London: W. B. Saunders Company, 1928. Cloth $12.00 net.

The fifth edition of Dr. DeLee's work on obstetrics in the main shows the same characteristics that the former editions have. The fact that this book has gone through several editions and been reprinted many times shows what a popular book it is, and it is justly so, for there is no book on obstetrics published in America that has such a fund of obstetrical knowledge as this book of Dr. DeLee's. We may not always agree with Dr. DeLee in his procedures, but we always can agree with his sincerity and his desire to improve the practice of obstetrics. It is a pleasure to note his attitude on so many problems in this day of rampant operating and ill-considered interference. As sound obstetrics in by far the majority of the problems presented, and as a reference book, it surely will hold a foremost place in obstetrical literature.

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*Physiopathologie et Traitement du Diabète Sucre. Par* H. CHABANIER, M. LEBERT et C. LOBO-ONELL. Preface du Professeur Legueu. Masson et Cie, Paris. Price 50 fr.

This volume of 441 pages is an expression of the views and of the work of the individual authors rather than an embodiment of the French viewpoint of diabetes. It is seriously written and is based upon a clinical experience with a thousand cases of this disease. The authors frankly avow they are presenting their own work and ideas and it is quite evident they have not followed routine lines. One feels sure a case in their hands would be sanely treated. Their theories are different, but their practice is much the same as ours. Thus the authors ascribe an active rôle to the kidneys in glycosuria. They comment upon the absence of a close relation between glycemia and glycosuria in different patients and indeed in the same patient at different times; they note that whereas the glycemia may remain the same the glycosuria after treatment decreases; they liken hyperglycemia to a high non-protein nitrogen and suggest that the diabetic by increasing his glycemia compensates for his disease and allows the body to utilize glucose like a normal individual; they call attention to cases of renal glycosuria and conversely to those with a high renal threshold. To them the renal element perhaps is the primary factor and the glycemia is the secondary. Stimulated in their work by Ambard it is natural and indeed useful that the renal element in diabetes is emphasized, even though we may think overemphasized. However, they do

not place the renal element above or quite on the par with the nonutilization of carbohydrate which is the characteristic of diabetic metabolism.

Insulin is used by them freely and they are sound, we believe, in their attitude that all diabetic children should receive it. To adults they often give it intermittently. During the insulin-free period the diet is markedly curtailed in carbohydrate. We doubt if they continue long to follow this practice. A diabetic's diet once increased whether with or without insulin can seldom, perhaps never, be reduced in our experience.

Surprisingly they report few reactions from insulin and comment upon their frequency in this country. We wish their experience was universal. They attribute it to their method of preparation of insulin which does not include as much purification as our American insulin. We await confirmation of their results upon this point from other sources. If insulin reactions could be avoided and the other good effects of insulin be preserved it would be wonderful!

The authors appreciate the value of insulin in complications and use it rigorously; they even use it locally in ulcers, but their cases are few in number and in general it is regrettable that they do not give the definite tables of results of treatment which are here prized so much.

We shall watch with renewed interest the publication of this group.

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*An Outline of Neurology and Its Outlook*, being the Eleventh Earl Grey Memorial Lecture delivered at King's Hall, Armstrong College, Newcastle-On-Tyne, March 11, 1929. By Sir E. Farquhar Buzzard. Oxford University Press, 1929. 24 pages. Price, 35 cents.

The Regius Professor of Medicine at Oxford University reviews briefly the history of neurology in his eleventh Earl Grey memorial lecture. He points out the benefits received from the anatomist, the physiologist, and the pathologist, as well as from clinicians, in developing this special branch of medicine. This small booklet is a pleasant review of the subject.

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*Practical Massage and Corrective Exercises with Applied Anatomy.* By Hartvig Nissen, late President of Posse Normal School of Gymnastics; former Director of the Swedish Health Institute. Washington, D. C., etc. Fifth Edition, Revised and Enlarged by Harry Nissen, President, Posse Nissen School of Physical Education, Boston, Mass. Illustrated with 72 Original Half-tone and Line Engravings. Philadelphia, F. A. Davis Company, Publishers, 1929. Price $2.50.

The revised and enlarged fifth edition of Nissen's "Practical Massage and Corrective Exercises with Applied Anatomy" represents a very useful textbook on these subjects. The first chapter is concerned with the history and technique of massage interestingly written. The rest of the book is divided into three parts. The first includes passive and active exercises of the special joints and muscles. The second part includes applied anatomy and corrective exercises for the whole body, and the third part includes the treatment of various diseases and injuries. The book is very well put together, the writing is simple and clear and the illustrations really illustrate. Mr. Nissen's experience of thirty years of clinical work and teaching makes him speak with authority.

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*Outline of Preventive Medicine.* For Medical Practitioners and Students. Published by Paul B. Hoeber, Inc. Price, $5.00. Prepared under the Auspices of The Committee on Public Health Relations, New York Academy of Medicine. Editorial Committee: Frederic E. Sondern, Chas. Gordon Heyd, E. H. L. Corwin.

This little book, with a section devoted to each of the particular specialties and evidently written by a man familiar with the specialties, seems to us to be of considerable value. It does not purport to be a textbook of physical diagnosis, but it does bring together some of the data that have been made available by various health studies. It appears that they have not made use of the life insurance statistics and those provided by such organizations as the Life Extension Institute to the extent to which they should be made known in a little booklet of this character. A chapter on the results hitherto acquired from health examinations should certainly be added in a subsequent edition.

As to be expected, the chapters vary in excellence of writing and in evidence of a true preventive medicine point of view. In any case, it seems that this book fills a want and that subsequent revisions will probably improve it.

At the moment, it appears to be somewhat too small to reach its maximum value.

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*The Internal Secretions of the Ovary.* By A. S. Parkes, M.A., Ph.D., D.Sc. Longmans, Green & Co. London, New York and Toronto. Price $7.50.

The fifth of the monographs on physiology appearing under the editorship of C. Lovatt Evans and A. V. Hill to the memory of Ernest Starling, "this book has been written with the object of bringing together the more important facts bearing upon the internal secretions of the ovary." In many respects it is a bringing up to date and expansion of Marshall's monumental work on the Physiology of Reproduction for this particular subject. There is for instance a bibliography containing 661 items which would be invaluable for anyone desiring to read up any particular phase of the subject. The book is chiefly useful to the research worker and specialist, and brings into small compass the results of an amazing diversity of recent work. For this very reason and also because the subject itself is in a state of flux the book is in no sense a textbook of generally accepted fact. The first three chapters are a review of the generally accepted physiological facts dealing with the ovary and with the oestrous cycle.

The rest of the book is a more or less critical review of all the more important pieces of work which have been reported during the last nine or ten years. They deal in particular with the ovary as an organ of internal secretion. The oestrus-producing hormone which Parkes names "Oestrin" is discussed at great length. He then passes on to a consideration of the cause of the periodicity of oestrus, and comes to the conclusion that so far as our present knowledge goes this cause is to be found in the activity of the anterior pituitary body rather than in the Graafian follicles. Finally the question of an additional hormone, or hormones, is taken up. He feels that the evidence for a specific inhibiting factor from the corpus luteum is strong. The book is a valuable one but due to the complexity of the subject its value is chiefly one for the physiologic or endocrine specialist.

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*Blood Grouping in Relation to Legal and Clinical Medicine*, by LAWRENCE H. SNYDER, Sc.D., Associate Professor of Zoölogy, North Carolina State College. Williams and Wilkins, Baltimore, 1929. Pp. 153. Price, $5.00.

In the past few years considerable interest has developed in blood grouping, particularly in the determination of paternity by this means. This book, besides being a timely summary of our knowledge of this subject, presents the results of the author's extensive researches. It is well arranged and contains many illustrations and tables. The most interesting chapters are those which discuss the mechanism of inheritance of blood groups, the blood groups in legal medicine, and the relationship of blood groups to anthropology. Two chapters, the one on indications and contra-indications for transfusion and that on the technic of transfusion, do not appear to be in the province of a geneticist and physiologist and could well have been omitted. Aside from this, however, the book is an important contribution to the literature, and should be of wide interest to clinicians, laboratory workers and students of heredity.

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*Diseases of the Chest and the Principles of Physical Diagnosis.* (4th Edition.) By GEORGE W. NORRIS, M.D., and HENRY R. M. LANDIS, M.D. Pp. 954. 478 illustrations. Philadelphia: W. B. Saunders Co., 1929. Price, $10.00.

The fourth edition of this widely known textbook contains no radical changes. The size of the volume has been increased by forty-four pages. Chapter III, on the "Acoustics of Physical Diagnosis," has been rewritten by Dr. Charles M. Montgomery and given the title of "Transmission of Sounds Through the Chest." A very brief chapter on diagnostic bronchoscopy by Dr. Louis H. Clerf has been added.

The authors have covered practically all common and rare chest diseases, but there is no section devoted to foreign bodies in the bronchi, a condition which is encountered fairly frequently. Again, since "Lipiodol," or iodized oil is being used for diagnostic purposes more and more commonly, a short chapter on this subject should be no more out of place in a textbook on physical diagnosis than the chapter on the electrocardiograph. It would certainly add to the completeness of the volume. As in the previous editions, the illustrations are excellent and the printing well done.

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*Varicose Veins—Injection Treatment.* By H. O. MCPHEETERS. Published by F. A. Davis Co. Price $3.50.

In a small, well illustrated volume, the author gives a short sketch of the Anatomy and Embryology of Veins in general, then takes up the Etiology of varicose veins and varicose ulcers. In detail he presents a technique which he has found effective in the treatment of eight hundred cases. He discusses the various solutions that have been tried and gives his reasons for selecting invertose sugar solution for use in most cases. His careful description of the preparation of the patient and the exact equipment necessary will be found helpful to the experienced as well as to the novice.

The chapter on Ulcer Cruris is particularly good, embodying some new ideas in the management of these conditions on an ambulatory basis. The volume includes the results of some experimental work demonstrating the safety of injection treatment of veins, and an excellent chapter on related pathology by Dr. Nathaniel Lufkin.

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*Practical Handbook for Diabetic Patients.* By ABRAHAM RUDY. M. Barrows and Co., Boston, 1929, 180 pp. Price $2.00.

This manual is written in simple style primarily for patients whose education in English and experience with American dietary customs has not fitted them to make use of the larger and more detailed books covering the same topics. It is well printed with large type. The subject of diet and food values is given more than 100 pages, somewhat out of proportion with the importance of this subject in the care of diabetic patients. However, excellent menus are listed for children and adults, and most important of all, methods of substituting racial foods such as Jewish, Italian and Armenian are clearly shown. About 180 recipes of various nationalities serve to distinguish it among the books in this field.

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*The Neuroses.* By ISRAEL S. WECHSLER, M.D., Associate Professor of Clinical Neurology, Columbia University, New York City. Octavo of 330 pages. Philadelphia and London: W. B. Saunders Company, 1929. Cloth $4.00 net.

Dr. Wechsler has in this book made a valuable addition for the psychiatrist's library. He has briefly and clearly outlined the history of psychiatry and the development of psycho-pathology in his first chapter, and then in subsequent chapters he has con-

sidered Mental Mechanisms, Etiology, Classification, Clinical Manifestations, Diagnosis, Course, and Prognosis of the Neuroses, and concluded with a chapter on Treatment and an appendix devoted to the taking of the history and examination of patients, General Intelligence, Mental Level, and the Psychoneuroses and Psycho-Metric Tests.

Although his approach is that of the psycho-analyst, he gives due consideration to other schools and methods of approach, as shown by his statement.

> "There is also no doubt that progress in neuro-anatomy and physiology, in bio-physics and chemistry, in ultra-microscopy, in the complex functions of the glands of internal secretion and the vegetative nervous system will solve many a psycho-pathologic riddle and reduce to gibberish much that passes for current psychology."

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*Text-book of Embryology*, by FREDERICK R. BAILEY, formerly Adjunct Professor of Histology and Embryology, College of Physicians and Surgeons (Medical Department of Columbia University), and ADAM M. MILLER, Professor of Anatomy, The Long Island College Hospital. Fifth revised edition. William Wood and Company, New York. 687 pp. 1929. Price $7.00.

The entrance to medical studies is through anatomy, sometimes with embryology first of all; and since medicine is a learned profession—so reputed—it is fitting that the introductory texts not only record the familiar facts, but present such matter in scholarly form, with due attention to words and phrases, and with illustrations selected for artistic merit and historical interest, out of the great accumulation having equal scientific value. Much is desired in a textbook which the student must accept in place of a library of original sources beyond hope of acquisition.

The textbook of embryology under consideration, first issued in 1909, is now in its fifth edition. It is a weighty volume (4 1/4 lbs.) and may be placed on a lectern. Through all five editions the Introduction has these opening sentences:—

> While Embryology as a science is of comparatively recent date, recorded observations upon the development of the fœtus date back as far as 1600 when Fabricius ab Aquapendente published an article entitled "De Formato Fœtu." Four years later the same author added some further observations under the title, "De Formatione Fœtus."

The latter work is unknown to bibliographers. Unknown perhaps to the authors are such classics as Aristotle's *De animalium generatione* and Galen's *De foetuum formatione*, which with their references to the ancients "date back" the beginning of embryology some 2000 years before 1600. With its statement that "Wolff's theory was theory pure and simple," and that "von Baer's publication in 1829 was of extreme significance in the development of embryological knowledge" (what did von Baer publish in 1829?), it is evident that for the good name of American embryology, this entire Introduction should be omitted.

If the elements of embryology were not intelligibly presented, this textbook would not have reached its fifth edition. But improvements are possible. The early development of the chick is described in Chapter VI, and early mammalian development in Chapter VII. Hertwig's rather muddy pictures of the avian germ-layers are reproduced, with Bonnet's germ-layers of the dog for comparison. The most striking difference between the two series of figures comes from cutting out the half-tone background in the dog and letting it remain in the chick. Figures 103, 157, 158, 216, 246, 274, 424, 503A, and 516 are among those which, for various reasons, should be replaced. Schauinland's dorsal view of an albatross embryo (fig. 506) is a shadowy apparition. The battered nose and popeye in His's figures of the development of the human face are not in the originals. Through a confusing *lapsus* Hertwig's designation of the *greater* omentum in figures 299 and 300 has been changed to *lesser* omentum; Hertwig thought that the lesser omentum was not shown in his drawings.

Fetus, according to Hyrtl who gave considerable attention to such matters, and in agreement with the lexicographers, should not be written with an *o*. This is not, like *esophagus*, a simplified spelling of questionable propriety, but the correction of an ancient error. *Lacrimal* is better than *lacrymal*. *Anlage* is not English, and in this volume is redundantly used. Fig. 357 represents a "vertical section [of the anlage] of the mammary gland." The "dorsal pancreas" of many figures becomes, in the text describing them, the "dorsal anlage." The authors evidently are not preoccupied with questions of usage; and a teacher who cares, frequently labors in vain, when the classes are provided with such textbooks. On reaching p. 645, the reader is rewarded by learning that an oblique facial cleft is a

cheilognathoprosoposchisis.

This book, then, is a good one, but in the interests of medical students there should be further improvements.

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## BOOKS RECEIVED FOR REVIEW

*Common Infections of the Female Urethra and Cervix* by Frank Kidd and A. Malcolm Simpson, with Additional Chapters by George T. Western and M. S. Mayou. Published by Humphrey Milford, Oxford University Press. 197 Pages.

*A Diabetic Manual for the Mutual Use of Doctor and Patient* by Elliott P. Joslin. Fourth Edition, Thoroughly Revised. Published by Lea & Febiger. 248 Pages. Price $2.00.

*The Diagnosis and Treatment of Arthritis* by Russell L. Cecil. Volume VI of Oxford Monographs on

Diagnosis and Treatment, Edited by Henry A. Christian. Published by Oxford University Press. 216 Pages.

*Laboratory Methods of the United States Army*—Third Edition Revised, of Medical War Manual No. 6. Edited by Charles F. Craig. Published by Lea & Febiger. 696 Pages. Price $3.50.

*A System of Bacteriology in Relation to Medicine.* Vol. IV. Published by His Majesty's Stationery Office. 482 Pages.

*An Introduction to the Study of the Nervous System* by E. E. Hewer and G. M. Sandes. Published by C. V. Mosby Company. 104 Pages. Price $6.50.

*The Blood Picture and Its Clinical Significance* by Professor Dr. Victor Schilling. Translated and Edited by R. B. H. Gradwohl. Published by C. V. Mosby Co. Seventh and Eighth Revised Edition. 408 Pages. Price $10.00.

*Modern Methods of Treatment* by Logan Clendening. Third Edition. Published by C. V. Mosby Company. 815 Pages. Price $10.00.

*The Newer Knowledge of Nutrition* by E. V. McCollum and Nina Simmonds. Fourth Edition. Published by The MacMillan Company. 594 Pages. Price $5.00.

*The Story of San Michele* by Axel Munthe. Published by E. P. Dutton and Company. 530 Pages. Price $3.75.

*The Nervous Child* by Hector C. Cameron. Fourth Edition. Published by Oxford University Press. 249 Pages.

*Dr. Colwell's Daily Log for Physicians.* Published by the Colwell Publishing Co. Price $6.00.

*Synopsis of the Practice of Preventive Medicine.* Edited by Shields Warren. Published by the Harvard University Press. 194 Pages.

*Le Liquide Céphalo-Rachidien* by Dr. Riser. Published by Masson et Cie. 250 Pages. Price 28 fr.

*A Manual of Midwifery* by Henry Jellett and David G. Madill. Fourth Edition Published by William Wood and Company. 1281 Pages. Price $10.00.

*Blood Grouping in Relation to Clinical and Legal Medicine* by Laurence H. Snyder. Published by The Williams & Wilkins Company. 153 Pages. Price $5.00.

*Medicine Monographs, Volume 16. Coronary Thrombosis: Its Various Clinical Features* by Samuel A. Levine. Published by Williams & Wilkins Company. 178 Pages. Price $3.00

*The Internal Secretions of the Ovary* by A. S. Parkes. Published by Longmans, Green and Company. 242 Pages. Price $7.50.

*Testicular Grafting from ape to man,* by Serge Voronoff and George Alexandrescu. Published by Brentano's Ltd. Translated by Theodore C. Merrill. 125 Pages.

*An Outline of Neurology and Its Outlook* by Sir E. Farquhar Buzzard. Being the Eleventh Earl Grey Memorial Lecture delivered at King's Hall, Armstrong College, Newcastle-on-Tyne, March 11, 1929. Published by Oxford University Press. 24 Pages. Price 35c.

*Traité de Physiologie Normale et Pathologique.* Published under the direction of: G.-H. Roger and Léon Binet. Volume 8, Physiologie Musculaire Chaleur Animale by Léon Binet et al. Published by Masson et Cie, Editeurs. 742 Pages. Price 110 fr.

*La Perméabilité et Les Obturations Tubaires* by Claude Bécière. Published by Masson et Cie, Editeurs. 250 Pages. Price 50 fr.

*The Practical Medicine Series. General Medicine* edited by George H. Weaver, Lawrason Brown, George R. Minot, William B. Castle, William D. Stroud and Ralph C. Brown. Series 1929. Published by The Year Book Publishers. 829 Pages. Price $3.00.

*Mayo Clinic Monographs—The Volume of the Blood and Plasma in Health and Disease* by Leonard G. Rowntree and George E. Brown. With the technical assistance of Grace M. Roth. Published by W. B. Saunders Company. 219 Pages. Price $3.00.

*Clinical Obstetrics* by Paul T. Harper. Published by F. A. Davis Company, Publishers. 629 Pages. Price $8.00.

*Hemorrhoids—The Injection Treatment and Pruritus Ani* by Lawrence Goldbacher. Published by F. A. Davis Company, Publishers. 205 Pages. Price $3.50.

*The Treatment of the Common Disorders of Digestion* by John L. Kantor. Second Edition. Published by C. V. Mosby Company. 300 Pages. Price $6.00

*The Treatment of Varicose Veins of the Lower Extremities by Injections* by T. Henry Treves-Barber. Published by William Wood and Company. 120 Pages. Price $2.25.

*The Eye in General Medicine with Special Reference to the Treatment of Diseases of the Eye* by A. Maitland Ramsey. Second Edition of "Diathesis and Ocular Diseases." Published by William Wood and Company. 255 Pages. Price $5.00.

*The Surgical Clinics of North America,* December, 1929—Volume 9, Number 6. Published by W. B. Saunders Company. 188 Pages.

*The Physiology of Oral Hygiene and Recent Research* by J. Sim Wallace. Second Edition. Published by Baillière, Tindall and Cox. 228 Pages. Price 10s. 6d.

*The Textbook of the Practice of Medicine* by various authors. Edited by Frederic W. Price. Third Edition. Published by Humphrey Milford, Oxford University Press. 1871 Pages. Price $11.50.

*Mammalian Physiology—A Course of Practical Exercises* by E. G. T. Liddell and Sir Charles Sherrington. Published by Oxford at the Clarendon Press. 160 Pages. Price $5.50.

*An Outline of Endocrinology* by W. M. Crofton. Second Edition. Published by William Wood and Company. 163 Pages. Price $3. 00.

*Pathfinders in Medicine* by Victor Robinson. Published by the Medical Life Press. 827 Pages. Price $10.00.